Croplife®

A BUSINESSPAPER FOR THE FARM CHEMICAL INDUSTRY

MEMBER, BUSINESS PUBLICATIONS AUDIT

BPA

MARKETING EDITION

A Miller Publication
Business Journalists Since 1873

Vol. 7 SEPTEMBER 12, 1960 No. 29

National Distillers, Federal Chemical Merger Proposed

LOUISVILLE—A merger of Federal Chemical Co., Inc., a 76-year-old, six plant manufacturer of mixed fertilizers, with National Distillers and Chemical Corp. has been approved in principle by the boards of both companies, according to an announcement by John E. Bierwirth, chairman, and Roy F. Coppedge, Jr., president, of National Distillers and Jefferson D. Stewart, Jr., president of Federal Chemical.

National Distillers will offer eight shares of its common stock for each outstanding share of Federal Chemical common stock and four common shares for each Federal preferred share. Federal has 20,000 common shares and 21,494 preferred shares currently outstanding.

Mr. Coppedge stated that the merger with Federal is an important forward step in the integration of National Distillers' fertilizer chemicals operation. Since 1950 the company has been increasingly active in the manufacture of a wide variety of industrial chemicals, including such fertilizer raw materials as phosphoric

(Turn to MERGER, Page 21)

Plant Pathologists Discuss Control of Nematodes, Disease

GREEN LAKE, WIS.—The application of fungicidal chemical products and nematocides to control various plant diseases was described in detail by speakers at the annual meeting of the American Phytopathological Society at Green Lake Aug. 29-31. Pesticide industry people as well as plant pathologists from all parts of the U.S. were on hand to discuss plant diseases and means of controlling them

Three North Carolina State College plant pathologists, J. N. Sasser, W. E. Cooper and T. G. Bowery, told the group that use of effective chemi-

Turn to PHYTOPATHS page 20

Mississippi Fertilizer Group Urges Farmers to Apply Ample Plant Food

BILOXI, MISS. — Changes in Mississippi agriculture, the role of research and education, and agriculture were among the main topics for discussion at the recent first annual convention of the Mississippi Soil Fertility and Plant Food Council.

More than 225 fertilizer dealers, salesmen, manufacturers, agronomists and educators met at the Buena Vista Hotel here for the two day meeting.

Proof of the need for increased fertilization was offered at the opening session by W. R. Thompson, agronomist of the agricultural extension service, Mississippi State University. In his report, based on a survey just completed, Mr. Thompson said, "In Mississippi for all crops, including pastures, there was about 200 lb. of mixed fertilizer or its equivalent per acre used last year. For best production on all crops, 500 lb. per acre of mixed goods would have been about the right rate." He noted that Si Corley, commissioner of agriculture, reported Mississippi farmers actually used 693,000 tons of fertilizer last year.

"If farmers generally had fertilized at the recommended rate, this would have amounted to 1,675,000 tons of mixed fertilizer. The amount of nitrogen used and actually needed is in about the same proportion as the mixed fertilizer used and needed," Mr. Thompson declared.

As an example of the difference fertilizer makes, he cited the 36 bu. an acre corn yield of farmers using the average rate of fertilizer in a hill country, compared to 70 bu. an acre for those using as much mixed fertilizer and nitrogen for side-dressing as is recommended. "Fertilizer used on any crop is the major factor in determining economical production," Mr. Thompson declared. "Fertilizer is the key to high production as well as normal.

"And pastures are one of the greatest outlets for fertilizer use in Mississippi at this time. Many pastures in Mississippi get no fertilizer at all, and others are not fertilized high enough or often enough."

Assisting Mr. Thompson with his report were T. M. Waller, associate extension agronomist, and K. L. Anderson, assistant extension agronomist.

Reiterating the need for increased soil fertility, Dr. J. D. Lancaster, another Mississippi experiment station researcher, stated that "Maximized efficiency in the use of fertilizer means maximized profits per acre on many crops in Mississippi. To accom-

(Turn to CONFERENCE, page 18)

Presence of Screwworms in Alabama Alerts Authorities Against Possible Infestation

WASHINGTON—The discovery on Aug. 31 of a single infestation of screwworms in Geneva County, Alabama, in a beef steer shipped from the Southwest has prompted livestock growers and State and U.S. Department of Agriculture authorities to take a number of precautionary measures. The infestation represents the easternmost case that has been reported since the last screwworms were found in central Florida in June, 1959.

All other animals in the Geneva County stockyards where the screwworms were discovered were inspected and found free of the pest. State and federal livestock inspectors began a careful search immediately for signs of additional screwworm infestation to livestock within the vicinity. Nearby growers have been asked to notify inspectors when they plan to ship animals from their farms and ranches.

State and federal livestock disease control officials in other states in the

(Turn to ALABAMA, Page 21)

BETTER SELLING FEATURES INSIDE.....

MERCHANDISING MARKETING SECTION

Fertilizer Magnet . . .

The Aus-Tex Garden Supply Store in Austin, Texas, uses its garden and lawn fertilizer department as a magnet to draw in many new customers. How E. D. Wooten, owner, accomplishes this is told in the current issue of Croplife . . .

Story on page 9

Oscar & Pat . . .

These two battling partners of the Schoenfeld and McGillicuddy Co. pay a visit to The Miller Publishing Co. in Minneapolis, home of Croplife. Join them as they meet editors, officers and other personnel of the Croplife staff . . .

Story on page 14

New Naphthalene Plant Planned by Collier, Tidewater

LOS ANGELES—Robt. T. Collier, president of Collier Carbon & Chemical Corp., and George F. Getty II, president of Tidewater Oil Co., announced on Sept. 7 that Collier and Tidewater are considering plans to build and operate a petroleum naphthalene plant as a joint venture at Collier's Los Angeles plant.

The proposed multi-million dollar facility is scheduled for completion late in 1961, and will have an initial capacity in excess of 50 million lb. a year. It will utilize raw material from both Tidewater and Union Oil Company of California, parent company of Collier Carbon & Chemical Corp.

Collier and Tidewater are also building a petroleum naphthalene plant at Tidewater's Delaware Refinery south of Wilmington, Del.

The new plants will utilize a patented process, developed by Union Oil Company of California, which converts an aromatic by-product of refineries into high purity naphthalene.

Phosphate Deposit Found in Tanganyika

WASHINGTON—A 10 million ton deposit of phosphate has been discovered in northern Tanganyika, announced the Foreign Agricultural Service.

The deposit is near a town called Arusha which is close to roads and railroads.

Development plans call for the processing and marketing of about 50,000 tons each year for fertilizer.

Accepted as Controlled Circulation; Published Bi-Weekly by The Miller Publishing Co., Minneapolis, Minn. Subscription Rates: $5 for 1 year; $8 for 2 years

NAC Assn. to Hear Congressman's Views, Group's Annual Convention Sept. 27-29

WASHINGTON — Jamie L. Whitten, congressman from Mississippi, will address the 27th Annual Meeting of the National Agricultural Chemicals Assn. at the Hotel del Coronado in Coronado, Cal., Sept. 27-29.

Speaking at the luncheon session on the first day of the meeting, Mr. Whitten will present his views on some of the broad farm issues of the day. He will also discuss the vital role played by chemicals in the production of the world's food supply, and the relationship of pesticides to both agricultural production and public health.

Jamie L. Whitten

As chairman of the Agriculture Appropriations Subcommittee of the U.S. House of Representatives, Mr. Whitten's remarks are also expected to deal with the importance of continued agricultural research to the present and future production of food and fiber. His address will point out the contrast between the quality and quantity of U.S. food supplies and those of certain other countries, relating these conditions to research programs in agricultural chemicals.

The association meeting will open at 9 a.m., Sept. 27, in the Grand Ballroom of the Hotel del Coronado. Following an address by the association's president, Jack V. Vernon, the group will hear Dr. Hardin B. Jones, assistant director of the Donner Laboratory of Medical Physics of the University of California at Berkeley, whose topic will be "The Reasonable and the False Issues of Carcinogenicity." He will be followed by Dr. Alfred M. Boyce, director of the University of California's Citrus Experiment Station at Riverside, who will speak on the safety of pesticide chemicals.

The importance of pesticides to world health programs will next be discussed by Dr. Henry van Zile Hyde, chief of the division of International Health, U.S. Public Health Service, Washington.

Following the luncheon session, the group will hear a panel discussion on the subject of "Public Relations in the Sixties." The panel, moderated by Jack Dreessen of the NAC staff, includes George K. Johnson of Monsanto Chemical Co., St. Louis, Mo., who will speak on industry's public relations responsibilities; Wally Erickson, radio farm director of station KFRE in Fresno, Cal., who will discuss the aspects of disseminating agricultural news to the public by radio; Jack T. Pickett, editor of the California Farmer, San Francisco, who will present the views of the agricultural press on how to mold public opinion, and Donald G. Lerch, Jr., of Washington, who will speak on the importance to the industry of planned public relations programs.

The program for the first day concludes with a reception and water show for association members and their guests, at 6:30 p.m.

The annual golf tournament and annual banquet are scheduled for the second day of the meeting. Committee meetings and other business will be held on the third and final day.

Advance registrations for the meeting will close Sept. 15. According to the NAC staff, this meeting will be one of the largest gatherings of the association ever held on the West Coast, with over 350 officials and representatives and pesticide manufacturers and formulators in attendance.

LABELS MANDATORY

HARRISBURG, PA. — Retailers who make sales of pesticides from bulk containers into unmarked cans and jugs will be prosecuted by agents of the Pennsylvania State Agricultural Department's Bureau of Foods and Chemistry in the future.

"This is an extremely dangerous practice," William L. Henning, secretary, warned. "In addition, it is a violation of the Pennsylvania Pesticide Act of 1957."

Delmar K. Myers, who heads the bureau, said that pesticides are considered misbranded if the labeling does not contain instructions for use which are necessary for protection of the public.

"Many of these pesticides are poisons, especially in their concentrated forms," Mr. Myers said. "It is a risk to the farm family to have them stored in containers which do not indicate what their contents may be."

Mr. Myers pointed out that the pesticide act provides for fines of between $50 and $100 for the first two offenses and fines of between $500 and $1,000 for subsequent offenses.

NPFI Names New District Representative

WASHINGTON — Dr. James M Brown, formerly agronomy extension specialist for the North Carolina Extension Service, was named district representative for the National Plant Food Institute, covering the states of Alabama, Mississippi and Tennessee.

Dr. James M. Brown

The announcement of the appointment of Dr. Brown was made by Dr. Robert L. Beacher, southern regional director for NPFI, with offices in Atlanta. Dr. Brown will make his headquarters at 1071 Terrace Acres, Auburn, Ala.

Born on a farm near Clayton, Ala., in 1925, Dr. Brown received his bachelor of science degree in agricultural science from Alabama Polytechnic Institute (now Auburn University) in 1949 and his master of science degree in agronomy (soils) under an American Potash Institute assistantship in 1951. He received his doctorate in soils at North Carolina State College in 1960.

From 1951 to 1953 he was assistant professor at Alabama Polytechnic Institute; from 1953 through 1955 he was assistant agronomist at the Alabama Agricultural Experiment Station; from 1955 to 1957 he was research instructor, department of soils at North Carolina State College; from 1957 to 1958 he did graduate work, and from 1958 until he joined NPFI, he was agronomy extension specialist in soil management in the North Carolina Agricultural Extension Service.

Sales Supervisor

CHICAGO — William L. Warren has been named sales supervisor for the expanded southern division of Morton Chemical Co.'s agricultural division. The region includes 11 southern states from Virginia to Central Texas.

Mr. Warren, who headquartered in Memphis, has represented Morton Chemical (formerly Panogen Co.) in the south since 1955.

Morton Chemical Co.'s agricultural division manufactures seed treatment chemicals, grain and soil fumigants and animal repellents.

How to Step Up Sales Efforts on CFA Meet Agenda

SACRAMENTO, CAL. — The California Fertilizer Assn. announced the program of its 37th annual convention, to be held at the del Coronado Hotel, Coronado, on Nov. 13-15.

Attendance of 500 to 600 persons is expected, representative of the commercial fertilizer industry and of agricultural leadership of the entire country, and especially from the west. Canada and Mexico will be represented, too, according to Frank Scoville of Chula Vista, chairman of the program committee.

Featured speakers will be Tyler Macdonald, senior vice president, Hixson & Jorgensen, Inc., Los Angeles, and Leon V. Tichinin, Santa Clara Agricultural Extension Service, University of California, San Jose.

Mr. Macdonald, an authority on sales technique and market development, will address the business session on the subject "The New Look in Selling."

Mr. Tichinin will speak following the business luncheon on "What I Learned From 20,000 Russians in Moscow." He was one of two Russian speaking experts on American agriculture to go to the American National Exhibition in Moscow during the summer of 1959. He was there during the 42-day period of the exhibition and talked privately with many people from all parts of the Soviet Union, visiting in the homes of a number of them.

Four directors will be elected to serve three year terms, and the new board will elect the officers to serve during 1961.

The program has been developed so as to insure that it won't be all work and no leisure. The ladies will have a social hour as guests of the association, and will have a choice of competition in bridge, canasta, golf, putting—and a mixed bowling tournament.

The men will have the choice of a golf tournament and the mixed bowling tournament. Prizes will be awarded to winners in all competition.

The annual banquet will feature dinner dancing on the last evening of the convention.

New Distributor Named

CEDAR RAPIDS, IOWA — P-D Service, Inc., Pavilion, N.Y., has been named a distributor for Highway Equipment Co., Cedar Rapids. They handle "New Leader" lime spreaders, combination lime and fertilizer spreaders, widespread lime and fertilizer spreaders and mobile blenders. P-D Service, Inc., serves a 20-county area in western New York, from Steuben, Yates, Ontario and Wayne Counties west. Address of the new distributor is Pavilion, N.Y.

Wisconsin Pesticide Firm Acts Promptly To Provide Product for Face Fly Battle

MADISON, WIS. — Speedy preparation of a new insecticidal product to aid in combatting a recent serious infestation of face flies on Wisconsin beef and dairy cattle herds, was accomplished by the Hopkins Agricultural Chemical Co. of Madison.

After reports of the serious infestation had come in, Dr. Ellsworth Fisher, extension specialist in entomology at the University of Wisconsin, checked on the situation and asked the Hopkins firm if it could provide an experimental quantity of its .2% DDPV product for application the following day.

Wils Mowry, sales manager of Hopkins, says that the staff worked throughout the night preparing the product, putting it into quart jars, taping experimental labels to bottles and packing the material ready for shipment next day.

Mr. Mowry said that the work was expedited through the cooperation of the Wisconsin State Department of Agriculture and the Pesticide Regulation Section of USDA in Washington. Since approval of such a product has been obtained through earlier research and product development work, it was not difficult to obtain label clearance to enable the product to be shipped to areas not only in Wisconsin but in surrounding states where the pest (Musca autumnalis) was giving trouble.

Whole-hearted cooperation was given by the Pet Milk Co. which sent a special notice about the product to its 3,500 patrons, mailing them with current milk checks. This, plus other publicity media, created a heavy demand for the DDPV product, Hopkins reports, and it became necessary to use "airlift" methods to speed the material to areas where it was greatly in demand.

Face fly reduces milk production of dairy cows and causes losses in weight of beef animals. The infestation with which Hopkins was concerned involved the states of Wisconsin, Iowa, Minnesota, Illinois and Indiana.

AIRLIFT—Shipments of DDPV pesticide to control infestation of face flies on cattle in a number of midwestern states are sent out post haste in effort to supply dairymen and other cattle owners. DDPV product was formulated by Hopkins Agricultural Chemical Co. for quick distribution.

INDUSTRY PERSONNEL NEWS

Spencer Appointments

KANSAS CITY, MO.—The appointment of Brown Beasley is a senior market research analyst in Spencer Chemical Co.'s agricultural chemicals market research department has been announced by B. W. Threadgill, department manager.

Brown Beasley

Mr. Beasley has been associated with Spencer as an agronomist since 1952, devoting most of his time to fertility promotion work in the company's mid-south district.

A native of Tennessee, Mr. Beasley holds both a bachelor's and a master's degree from the University of Tennessee. In his new job, he will make his headquarters at Spencer's general offices in Kansas City.

Meanwhile, appointment of two sales representatives and a change in assignment for another have been announced by Ray White, general sales manager for Spencer's agricultural chemicals division.

The new salesmen are William F. Harris, who will represent Spencer in Mississippi and Louisiana, and John Naylor, who will become Spencer's second salesman in Missouri. Also, in a change of assignment, Charles Majoros, sales representative in New York and Pennsylvania, will move to the company's north-central district as a technical service representative.

●

Joins Chemagro

KANSAS CITY, MO.—Samuel F. Stewart has joined Chemagro Corp. of Kansas City as a sales representative. He will make his headquarters in Carlisle, Pa., and will service a territory that includes the states of Pennsylvania, New Jersey, Maryland and Delaware.

Prior to joining Chemagro, Mr. Stewart was engaged in the fruit growing business. He is a graduate of Pennsylvania State University where he majored in agricultural economics and farm management.

●

Announces Appointment

NEW YORK—John R. Jones has been named New York-New England district sales manager for American Potash & Chemical Corp. it was announced by Dr. A. J. Dirksen, general sales manager, eastern.

John R. Jones

Mr. Jones will continue to headquarter out of the firm's eastern general sales offices in New York.

●

Monsanto Executives

ST. LOUIS—A new board member and two new vice presidents of Monsanto Chemical Co. have been elected by the board of directors, announced Charles Allen Thomas, chairman. J. L. Christian, of St. Louis, vice president, was elected to the board and to the company's executive committee.

Edward J. Bock and Tom K. Smith, Jr., both of St. Louis, were elected vice presidents. All three changes were effective Sept. 1.

Charles H. Sommer, president, also disclosed the formation of a new operating division and announced that Mr. Bock succeeded Mr. Christian as general manager of the inorganic chemicals division. On the same date, Mr. Smith became general manager of a new division, the agricultural chemicals division.

●

Elected Director

NEW YORK—Dr. Carl F. Prutton has been elected to the board of directors of Commercial Solvents Corp. He is a director of Food Machinery & Chemical Corp. and a consultant for several chemical companies. Dr. Prutton retired last month as executive vice president, chemical divisions of FMC and was formerly vice president, director of operations, engineering and research Mathieson Chemical Corp.

New Sales Director

SAVANNAH, GA.—Southern Nitrogen Co., Inc., has announced the promotion of John P. Porter from sales supervisor to director of sales—agriculture.

John P. Porter

In his new position, Mr. Porter will continue to assist in selecting, training and supervising sales personnel in SONICO's sales area and will work closely with the company's service groups, coordinating their efforts with sales. He will also be personally responsible for handling many of Southern's national accounts.

A native of Charlotte, N.C., Mr. Porter began his career in the fertilizer industry with the F. S. Royster Guano Co. 21 years ago.

Agricultural Manager

LINCOLN, NEB.—Harris Laboratories, Inc., has announced the appointment of C. Gilbert Aron as manager of its agricultural chemistry division.

He was formerly employed as chief analyst with Farm Crops Processing Corp., Omaha, and more recently has been chief chemist for Lincoln Grain Exchange.

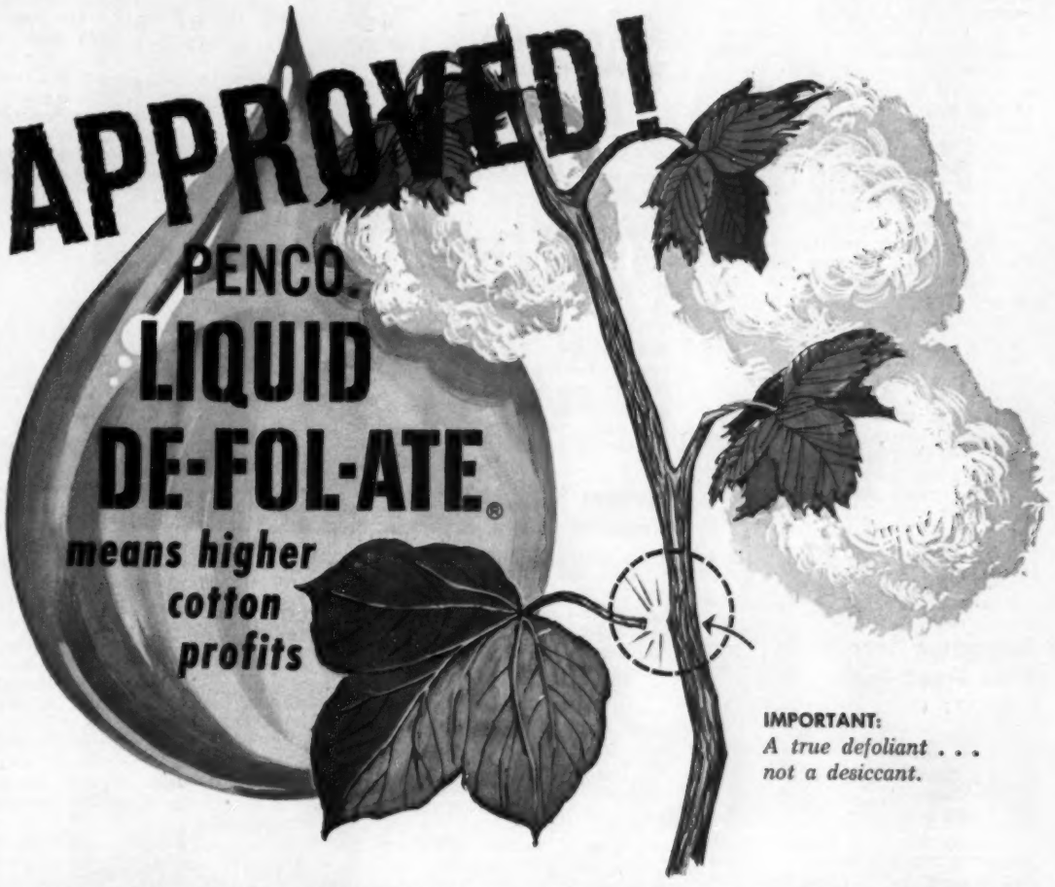
●

V-C Names Six

RICHMOND, VA.—Virginia-Carolina Chemical Corp. has appointed Frederick E. Van Nostran to its agricultural chemicals technical service group, John H. Wilson to its agricultural chemicals development group in research and development and Marion J. Mart to its agricultural chemicals sales staff.

Also, the chemicals division of the company has promoted three men in

(Turn to PERSONNEL, page 7)



IMPORTANT:
A true defoliant . . . not a desiccant.

PENCO LIQUID DE-FOL-ATE, a reliable and effective magnesium chlorate type defoliant, tends to open mature bolls at one time, thereby permitting the greatest amount of cotton to be harvested at *one* picking.

PENCO LIQUID DE-FOL-ATE *improves grade* — lessens trash and lint staining when picked by machine or hand.

It makes mechanical harvesting faster, more efficient, reduces boll rot and rotting of fiber and seed.

Specify **PENCO LIQUID DE-FOL-ATE**. Talk to your **PENCO** dealer. Write for free Technical Bulletin No. S6a.

Check These Advantages of PENCO LIQUID DE-FOL-ATE

- A true defoliant—not just a desiccant
- Drops leaves at stem on stalk
- Hygroscopic—works faster
- Not acutely toxic, hazardous, or unpleasant to handle
- Contains fire suppressant
- Not highly corrosive to equipment or sprayers
- Quality-controlled product
- Means more profit for sprayers

AGRICULTURAL CHEMICALS DIVISION
PENNSALT CHEMICALS CORPORATION
TACOMA 1, WASHINGTON

OFFICES AND PLANTS:
Bryan, Texas Montgomery, Alabama

Pennsalt Chemicals
ESTABLISHED 1850

INSECT, PLANT DISEASE NOTES

Boll Weevil Migration Continues in Tennessee

KNOXVILLE, TENN.—Boll weevil migration continues to the non-infested area. Rank cotton supports the heaviest populations and control is becoming more difficult in these fields. Many run-away infestations were found where control has not been started or has been done at irregular intervals. Rain has favored further weevil build-up. Adults are very numerous in the blooms. The average punctured squares in the southern counties were 43%. Counts were confined to the late fields where most of the damage is occurring. Infestations will continue to increase. Very little damage from migrating weevils is expected north of the second tier of counties. Migrating weevils will probably move into the northern counties by the middle of September.

Boll worm continues to cause considerable damage in the weevil infested area and are becoming a problem in the other areas.

Cabbage looper infestations have declined all over the area. Some control has been carried out for them alone.

Spider mites are still causing serious damage but the rains helped suppress infestations. Some spots have caused complete defoliation and boll drop.

Aphids continue to be a problem in many fields where weevil control has been going on. Infestations should be brought under control before the bolls open to prevent damage from honeydew on the lint.

Inspection Reveals No Pine Shoot Moth

SALEM, ORE.—Inspection of 145 Oregon nurseries failed to reveal the presence of the dreaded European pine shoot moth, the Oregon State Department of Agriculture reports. Some of the nurseries were inspected more than once.

Because this moth poses a serious threat to Oregon's commercial pines, the State Forestry Department has spearheaded an intensive survey of pine areas.

Nurseries selling ornamental pines —popular in landscape plantings and host to the pest—were the focal point for early survey work in this state because a heavy Seattle-Tacoma infestation was traced to imported nursery stock.

Insect Activity Heavy In Arizona Counties

PHOENIX, ARIZ. — Cotton bollworms, leaf perforators and loopers, along with beet armyworms, are on the increase in some fields in all parts of the state.

A few bollworms were found in all parts of Maricopa County. Loopers, yellow striped armyworms, beet armyworms, salt marsh caterpillars are all on the increase, and some damage is being caused in a few fields. Lygus continue to cause severe injury in some untreated fields.

The leaf perforators, loopers, beet armyworms and bollworms are on the increase in Pinal County. Many fields need controls at once.

Beet armyworms, cotton bollworms and leaf perforators were noted in the Avra Valley of Pima County. Control of leaf perforators is needed in several fields. A few lygus also causing injury. Farmers should watch for perforators, bollworms and beet armyworms. The bollworms and leaf perforators can cause serious injury at this time.

Bollworms are showing up all over the Safford Valley in Graham County, and controls may be profitable in many fields.

Cotton leaf perforators are on the increase in Yuma County. Lygus populations also injurious in some fields. Bollworms are present in some fields.

Face Flies Infest Six Additional States

WASHINGTON—The face fly, an irritating livestock pest that clings tenaciously around the eyes and noses of animals, has been found in six more states so far during 1960, the U.S. Department of Agriculture reported.

The pest has been found for the first time in Iowa and Missouri—the first finds west of the Mississippi River—and in Connecticut, Maryland, Tennessee, and North Carolina.

It is also reported to have spread to many previously uninfested counties of states where infestations had already been reported. The fly now occurs nearly everywhere east of the Mississippi and north of Tennessee and South Carolina.

Hessian Fly Population Reduced in Missouri

COLUMBIA, MO.—Results of the summer wheat stubble survey for Hessian fly indicate that fly numbers have been greatly reduced during the year over the entire state. This breaks the steady buildup which occurred during 1958 and 1959. Regardless of the decline in fly populations, there are still sufficient numbers present in the southwest area and in localized areas throughout the remainder of the state to cause serious damage to early seeded wheat.

The third generation of corn borers is now in full swing in the extreme southeastern counties. Moths are still flying, eggs being laid and numerous small larvae are now present on late corn that is just tasseling or in fields showing 50% or more green silks.

This generation is usually very heavy on late corn in the bootheel counties and controls are justified in those fields with a good prospect.

Second Oriental Fruit Fly Found in California

SACRAMENTO — Joint detection efforts of federal, state and county entomologists in Orange County have resulted in the finding of a second specimen of the Oriental fruit fly, pest of a long list of agricultural crops.

Fly No. 2, a male, was found in Anaheim, about two miles from the orange tree in which the first specimen, a female, was found about a month ago.

The second fly was found in a trap baited with methyl eugenol, a preparation with a special attraction for male Oriental fruit flies. Fly No. 1 was taken in a trap set out to snare Mexican fruit flies, a major insect pest.

Armyworms Found in Georgia Grain Crops

ATHENS, GA.—Light to heavy infestations of fall armyworm on millet, grain sorghum, Coastal Bermuda, and fescue in Butts, Coweta, Carroll, Polk, Floyd, Cherokee, Gwinnett, and Barrow counties. Light infestations on millet in Madison and Hart counties have been reported.

Light infestations of corn earworm on grain sorghum in the above mentioned counties have also been noted.

Light to moderate infestations of sorghum webworm on sorghum and millet heads in Butts, Gordon, and Barrow counties.

Heavy infestations of boll weevil throughout northwest, north, and northeast Georgia. Square counts were not made due to the scarcity of squares.

Bollworms are reported in moderate to heavy infestations of small and mature bolls throughout the above mentioned area of Georgia. Light infestations of cotton aphid are noted also.

BUGS' APPETITE INSTINCTIVE OR ACQUIRED CHARACTERISTIC?

ITHACA, N.Y.—Tarnished plant bugs, which attack many of the Northeast's most important commercial crops, hit some types of fruits and vegetables harder than others.

This fact, uncovered in recent research at the New York State College of Agriculture, may give Cornell University scientists clues to new ways of controlling the insects.

The study, being carried out by Gudmund Taksdal, research assistant, working under the direction of Prof. David Pimentel, shows the bean variety known as "bountiful" survives tarnished plant bug attacks better than Fordhook limas, red kidney beans, or California pinks. Mr. Taksdal is experimenting with eight other bean varieties to see how they fare against the insects.

The study also shows radishes and cabbages have relatively high resistance to the insects.

Mr. Taksdal has found plant bugs have a strong tendency to continue eating, throughout their lives, the kinds of food they were raised on. Bugs that hatched from eggs laid on alfalfa prefer it to fleabane, for example, and those hatched on fleabane dislike alfalfa. Mr. Taksdal isn't sure whether this means there are definite races of tarnished plant bugs that prefer certain foods, or whether the tendency to eat certain foods is acquired after hatching.

Tarnished plant bugs attack beans, cabbages, apples, peaches, corn, wheat, oats, and alfalfa, among other crops. They can stunt, deform or kill fruit, or prevent normal development of the fruit by feeding on the flowers.

Grasshoppers Plentiful in Wisconsin Alfalfa

MADISON, WIS.—Partial completion of the adult grasshopper survey has revealed the incidence of grasshoppers to be somewhat higher than anticipated. The sandy areas in the central portion yielded high counts, as expected; but counties adjacent to Lake Michigan were also heavily populated with grasshoppers, primarily the red-legged grasshopper. The instars varied from second to adult.

Injury has been minimal even in most of the heavily infested fields of alfalfa. The high incidence of immature grasshoppers in many of these fields indicates that injury will most likely become more apparent from now on.

It would appear that since development this season is retarded, a greater part of the grasshopper egg laying will occur later than usual.

Black blister beetles are common in some fields of alfalfa throughout most of the state, but the ash-gray blister beetle has not been seen although it was observed earlier in the season. Although these beetles feed on crops to some extent, they are considered beneficial in that their larvae feed on eggs of grasshoppers. However, both species appear to be less abundant than in previous years.

Although corn earworm moth catches have not been significant in most areas, one female can scatter many eggs. European corn borer egg hatching has increased and moth flight has been heavy. Many of the females deposit egg masses near the ears.

Adults of the fall armyworm have begun appearing in the blacklight detectors. Second brood bristly cutworms have reached their peak and are laying eggs in Dane County.

Armyworms Hit Crops In Alabama Fields

AUBURN, ALA.—The armyworm infestation which began some weeks ago, continues to spread throughout Alabama. Three weeks were required for the pests to cover the southern half of the state, but calls coming in from county agents show that the insect has advanced well into North Alabama. The infestation now extends as far north as Cherokee County.

W. A. Ruffin, entomologist with the Auburn University Extension Service, said much-needed rains that have come to all parts of the state apparently have helped the spread of the armyworm to new areas. He explained that dry weather encourages the armyworm pupae to remain dormant in the soil.

Mr. Ruffin said he had received reports of the pest's appearance in Cherokee, Etowah, Calhoun, and St. Clair counties in Northeast Alabama. Armyworms have also been reported in Pickens County, and Mr. Ruffin said that considering present conditions, he believes the infestation extends farther north than this on the western side of the state.

Controls Help Reduce Colorado Pest Problem

FORT COLLINS, COLO.—Use of recommended control measures and proper application of insecticides have reduced insect problems in many areas of the state, the latest Colorado Insect Detection Committee report indicates.

The report, issued at Colorado State University, shows potato aphid populations still remain high, and are exceptionally high where controls were not applied properly. With one type, the green peach aphid, there were as many as 356 aphids per 10

leaves in untreated potato fields in Weld County, while only 57 were found per 10 leaves in treated fields.

Proper controls are also credited for the fact that no tuber flea beetles were found in Weld County. Only light populations of this insect were noted in Montrose County. The report also showed that numbers of the six-spotted leafhopper are declining.

A large increase in the population of the spotted alfalfa aphid was reported in some areas of the state. Large numbers were reported in Otero County, and the aphids have spread to Garfield County from Delta and Mesa counties.

An increase in spotted alfalfa aphids also was noted in Boulder County, and survey entomologists said this insect is likely to spread through northeastern Colorado soon.

Lygus bugs also continue to be a problem in alfalfa seed producing areas of the Western Slope.

Damage to the lower three to five leaves of corn from the two-spotted spider mite was reported in Weld, Boulder and Adams counties. Infestations occurring on the seventh and eighth leaves were noted in Otero County.

Proper controls also have been effective in the fruit areas of the Western Slope. Entomologists said the two-spotted spider mite is under control in orchards where spray schedules have been followed in Montrose, Delta, Mesa and Garfield counties, and the codling moth also is well under control in those areas.

Some 30 to 50 peach silver mites per leaf were reported to be silvering peach foliage in the Paonia area of Delta County, however.

In Otero and Pueblo counties, the variegated cutworm was damaging foliage of sugar beets. The committee also noted that nature was helping in the control of insects this season, and reported increases in two beneficial insects — ladybird beetles and nabid bugs.

Armyworms and Chinchbugs At Work in Mississippi

MERIDIAN, MISS. — Infestations of armyworms were stripping Mississippi pastures, lawns, feed crops and temporary grazing crops Sept. 1, according to a report by David Young, entomologist at Mississippi State University.

Chinchbugs were also attacking St. Augustine grass lawns in many parts of the state, it was reported.

MCA Meeting Planned

WASHINGTON — The 10th semi-annual meeting and midyear conference of the Manufacturing Chemists' Assn. will be held Nov. 22 at the Statler Hilton Hotel in New York City.

A day-long series of panel discussions on subjects of interest to the chemical industry will begin at 10 a.m. The meeting will be concluded with a reception and banquet that evening. The sessions are designed to orient executive and staff personnel of MCA member firms with current trends in the chemical industry. Approximately 1,000 attended the 1959 meeting, and it is expected that attendance will be about the same for this year's sessions.

To Become Cooperative

CLANTON, ALA.—Officials of the Farmers Marketing & Exchange Fertilizer manufacturing plant here have announced plans are underway to convert the company into a cooperative. The new organization would be known as the Mid-State Farmers' Cooperative, Inc.

Reorganization plans were revealed following a statewide reorganization of the Alabama Farmers' Marketing & Exchange, which not only engages in the fertilizer business but also farm supplies in general.

Dow, Allied Labs Reveal Merger Proposal

MIDLAND, MICH. — Directors of the Dow Chemical Co. of Midland and Allied Laboratories, Inc., of Kansas City, Mo., approved a proposal for merger of the two companies.

The proposal is subject to ratification by Allied stockholders at a meeting called for Wednesday, Nov. 30, in Wilmington, Del. Allied stockholders of record as of Oct. 21 will vote on the proposal.

The action of the two boards was announced jointly by Leland I. Doan, Dow president and J. L. McKee, Allied president. The Dow board met at the company headquarters in Midland, and the Allied directors met in Indianapolis, home of its Pitman-Moore division.

If the merger proposal is approved by the Allied stockholders, Allied would still continue to operate under its present officers as a division of Dow. No change in personnel or in operating plan of Allied Laboratories is contemplated by Dow.

Under the proposal, Dow common stock would be issued to Allied and the latter would distribute the Dow stock to its stockholders on the basis of two thirds of a share of Dow stock for each share of Allied stock. Assets and business of Allied would be transferred to Dow and the latter would assume all Allied liabilities, the announcement said.

Allied manufactures a diversified line of pharmaceutical and biological products used for the prevention and treatment of human and animal diseases, as well as certain proprietary and cosmetic products. Its plants are located at Indianapolis and Zionsville, Ind., Sioux Falls, S.D., and Batavia, Ill.

Dow operates plants in 13 states. Both Dow and Allied also have Canadian plants and overseas operations.

Minnesota Soil Sample Campaign Announced

ST. PAUL — A special campaign urging farmers to test their soil this fall is being launched in Minnesota again this year.

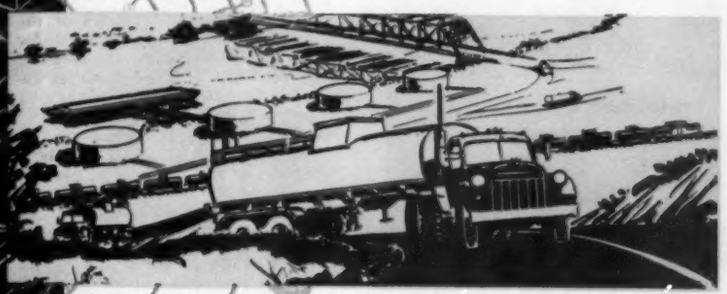
As in the past, the campaign is called "Minnesota's Fall Soil Sample Roundup," and will be conducted jointly by farmers, county agents, fertilizer dealers, industry representatives and the University of Minnesota.

Last fall, a similar campaign boosted by 1,300 the number of samples sent to the University's soil testing laboratory during September, compared to the same month of 1958. In October, total number of samples tested was 4,096 in 1959, compared to 3,261 in 1958 and 2,811 in 1957.

Also, total samples tested by the University in 1959 went over 30,000 for the first time. But soils men say even more should be sent in.

NOW....PROMPT MOLTEN SULPHUR DELIVERIES

Radiating out from Cincinnati



This is the first of the TGS Terminal Molten Sulphur Truck and Rail Distribution Stations being set up to serve industrial areas of the country. Regular large tonnage barge shipments of Molten Sulphur from our mines in the Gulf area are keeping this Cincinnati Terminal well-stocked to meet the growing demand for Molten Sulphur in the Ohio River area.

Additional Molten as well as Solid Sulphur terminals are being considered for other parts of the country.

TEXAS GULF SULPHUR COMPANY

75 East 45th St., New York 17, N. Y. / 811 Rusk Ave., Houston 2, Texas

Sulphur Producing Units: Newgulf, Texas • Spindletop, Texas • Moss Bluff, Texas • Fannett, Texas • Worland, Wyoming • Okotoks, Alberta, Canada

Molten Sulphur in tank *cars* can be delivered to any point in the States or Canada from our nearest mine or recovery plant. Barge deliveries of Molten Sulphur are available on all navigable inland waters. Solid Sulphur, as for many years, is deliverable all over the world. Large inventories at our mines assure industry it will get its supplies when needed.

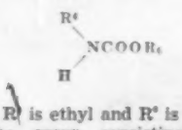
PATENTS and TRADEMARKS

2,946,717

Insect Repellent Composition and Method for Repelling Insects. Patent issued July 26, 1960, to Kenneth E. Cantrel, Bartlesville, Okla., assignor to Phillips Petroleum Co. An improved insect repellent having enhanced repellency comprising 3-chloropropyl-n-octyl sulfoxide incorporated with a N-alkyl imide of bicyclo-[2.2.1]-heptene-2, 3-dicarboxylic acid wherein the alkyl substituent of said imide has 1 to 12 carbon atoms.

2,946,719

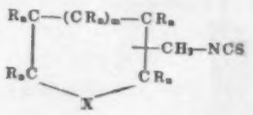
Synergistic Insecticidal Compositions. Patent issued July 26, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., New York. Synergistic insecticidal compositions comprising O,O-dimethyl S-(1,2-dicarbethoxyethyl)dithiophosphate and an organic carbamate ester having the following general formula



wherein R' is ethyl and R" is selected from the group consisting of 2-naphthyl, furfuryl, 1-naphthyl and 2-ethylhexyl radicals, wherein said components are present in the ratio of about 2 parts of said carbamate per part of said dithiophosphate.

2,946,720

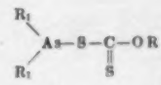
Method of Treating Nematodes by Treating with a Heterocyclic Methyl Isothiocyanate. Patent issued July 26, 1960, to Norman J. Lewis, Kirkwood, Mo., assignor to Monsanto Chemical Co., St. Louis. A method of inhibiting the destructive activity of parasitic nematodes in soil which comprises dispersing in the infected soil a toxic amount of a compound having the structure



wherein R is a radical selected from the group consisting of hydrogen, alkyl radicals having up to three carbon atoms, and halogen atoms; wherein n is an integer from one (1) to two (2), and m is an integer from zero (0) to one (1) provided that when m is zero (0) the sum of all of integers n is an uneven integer from three (3) to seven (7) and when m is one (1) the sum of all the n integers is an uneven integer from five (5) to nine (9); and wherein X is a chalcogen having an atom weight between ten (10) and forty (40).

2,946,814

Process for the Preparation of Arsenic Xanthates and Parasiticidal Compositions Produced Thereby. Patent issued July 26, 1960, to Cesare Agusto Peri, Milan, Italy, assignor to Montecatini, Societa Generale per l'Industria Mineraria e Chimica, a corporation of Italy. In the art of control of insect and fungus pests, the improvement comprising applying to the locality of the said pests a xanthate of the formula



in which R is selected from the group consisting of saturated and unsaturated linear and branched alkyl hydrocarbon, and cycloparaffin hydrocarbon radicals, and R_1 is a hydrocarbon radical taken from the group consisting of alkyl and phenyl.

2,937,081

Defoliating Crop-Bearing Plants with Elemental Iodine. Patent issued May 17, 1960, to John H. Nolan, St. Louis, Mo. The method of defoliating crop-bearing plants which comprises applying elemental iodine in an amount sufficient to induce substantial defoliation to the leaves of a plant having a crop at least nearing maturity.

2,940,894

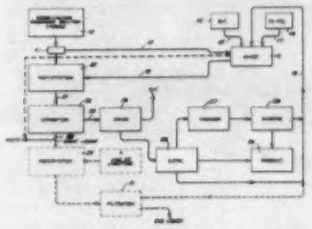
Method for Controlling Nematodes Employing Amino-Isobutyronitriles. Patent issued June 14, 1960, to W. E. Craig, Philadelphia, and John O. Van Hook, Roslyn, Pa., assignors to Rohm & Haas Co., Philadelphia. A method of controlling nematode infestations of soil which comprises introducing a compound selected from the group consisting of α-aminoisobutyronitrile, α-methylaminoisobutyronitrile, and α-dimethylaminoisobutyronitrile into the nematode-infested soil in an amount from 5 to 100 parts per million based on the weight of the soil.

2,948,602

Production of Phosphate Fertilizers and Resultant Product. Patent issued Aug. 9, 1960, to Leonardus J. Revallier and Willem Slot, both of Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands. A process for producing from fluorine-containing raw calcium phosphate a mixed fertilizer comprising nitrogen, calcium and phosphate, wherein the phosphate is substantially completely soluble in ammonium citrate and soluble to a large extent in water, comprising the steps of: treating the raw phosphate with nitric acid to produce an acid decomposition liquor; adjusting the molar CaO/P_2O_5 ratio of the liquor to a value not greater than 2; continuously neutralizing the thus adjusted liquor to a pH within the range of 6 to 7.5 by simultaneously introducing streams of the adjusted liquor and NH_3 into a contacting vessel; reducing the pH of the neutralized liquor to about 4, whereby the ammonium-citrate solubility of the contained phosphate is not appreciably lowered; evaporating the neutralized liquor of the reduced pH to obtain a melt; thereafter drying said melt, and recovering the dried melt which forms the above mentioned mixed fertilizer.

2,948,589

Granular Phosphate Material. Patent issued Aug. 9, 1960, to James G. Gilchrist, Bartow, Fla., assignor to International Minerals & Chemical Corp. A method of producing granular precipitated dicalcium phosphate which comprises mixing phosphate rock with sulfuric acid in proportions of 60 parts by weight of phosphate rock of 68% bone phosphate of lime content with 36 parts by weight of 98% sulfuric acid added as approximately 53° Bé. aqueous solution, aging the mixture, leaching the aged mixture with aqueous medium to produce an aqueous monocalcium phosphate solution containing fluoride impurities and approximately 30% dissolved solids, defluorinating the leached solution with limestone, removing the precipitated solids from the aqueous defluorinated monocalcium phosphate solution, adding to 900 parts by weight of said solution a paste prepared by mixing 100 parts by weight of said solution with approximately 27.6 parts by weight of lime, approximately 40 parts by weight of undersized product, and approximately 48.8 parts by weight of limestone, reacting the said aqueous defluorinated monocalcium phosphate solution and said paste for a period of approximately one hour at 90° C., filtering the solids from spent solution and drying the product at a temperature of approximately 120° C. for approximately one hour.



2,948,585

Process for Applying Pest Control Substances to Seeds. Patent issued Aug. 9, 1960, to Maurice Fitzgibbon, Lancaster, England. Process for applying to seeds a pest control substance volatile in steam comprising forming a mixture of the substance in vapor form with water vapor, and condensing both the substance vapor and the water vapor on the seeds.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Dacthal, in capital letters, for herbicide. Filed Feb. 9, 1960, by Diamond Alkali Co., Cleveland, Ohio. First use Oct. 8, 1959.

Gardeners Pride, in capital letters, for peat for use as a soil conditioner. Filed June 26, 1959, by Milburn Peat Co., Inc., Chicago, Ill. First use May 12, 1959.

Fert-Organic, in capital letters, for fertilizer in dehydrated, concentrated water soluble powder form, and in liquid form. Filed May 11, 1960, by Clover Chemical Co., Pittsburgh, Pa. First use Oct. 15, 1959.

Ferti-Lawn, in capital letters for fertilizer in dehydrated, concentrated water soluble powder form, and in liquid form. Filed May 11, 1960, by Clover Chemical Co., Pittsburgh, Pa. First use Oct. 15, 1959.

Hurri-Green, in capital letters, for fertilizer. Filed May 11, 1960, by Re-Mark Chemical Co., Inc., Miami, Fla. First use March 26, 1957.

SAFETY GUIDE AVAILABLE

WASHINGTON — Publication of the third of a new "Safety Guide" series entitled "Flammable Liquids: Storage and Handling of Drum Lots and Smaller Quantities" has been announced by the Manufacturing Chemists' Assn., Inc. The new guide gives safety recommendations for both inside and outside drum storage, methods of dispensing from drums, drum filling from storage tanks, containers for use of flammable liquids and also offers other applicable safety suggestions. Copies of the guide, designated as SG-3, are available at 20¢ each from the Manufacturing Chemists' Assn., 1825 Connecticut Ave., Washington 9, D.C.

Saga of Insect Control

Fig. 1.

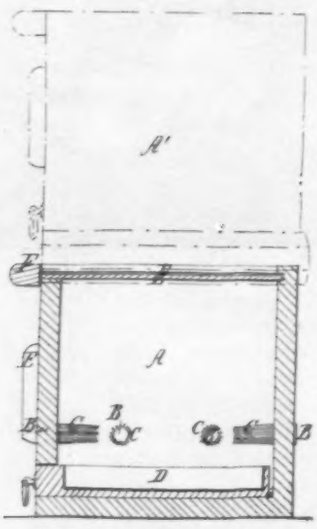
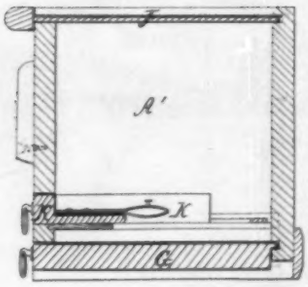


Fig. 2.



BEFORE the days of effective chemical controls for insect pests, people concerned with curtailing the activities of pests had to devise all types of mechanical gadgets to ensnare and do away with the bothersome bugs.

More than a hundred years ago . . . Nov. 1, 1859, to be exact, one William Elwell of Gardiner, Maine, patented a fly trap consisting of two quadrangular boxes each with a sliding glass top for inducing the flies to pass from the lower to the upper box. The pests would then be killed by fumes of sulphur "or other suitable substance."

The flies would enter the lower box through small one-way openings in order to get at molasses bait waiting inside. When all have moved upward into the upper box, the wooden bottom (G) is put in place and the box removed, leaving the lower box ready for another collection of flies.

A small quantity of sulphur is placed in a cup, ignited, and the fumes quickly do away with the captured insects. Later, they are dumped out and another crop of unwanted pests is ready to be gathered.

PERSONNEL

(Continued from page 3)

its research and development department.

Russell J. Rowlett, Jr., research and development director, said D. Scott Sears will be assistant director in charge of both inorganic and organic research, and Charles F. Booth will be assistant director in charge of engineering development, including inorganic and organic chemical processes.

In another promotion, Wendell M. Byrd was named section leader in organic research.

●

District Sales Manager

NEW ORLEANS — J. Frank Greeley has been named western district sales manager for the multiwall bag division of West Virginia Pulp & Paper Co., announced Jason M. Elsas, southern regional manager. Mr. Greeley will make his headquarters at the company's Torrance, Cal., plant and he succeeds Frank L. Smith who has resigned to accept a position with another firm in an entirely different field.

In his new position Mr. Greeley will be responsible for the sale of the division's products in the western sales district which includes the states of California, Arizona, Nevada, Oregon, Washington, Idaho, Utah, Wyoming, Colorado and most of New Mexico. He will head a sales force working out of offices in Torrance, San Francisco and Denver.

●

Sales Assistant

NEW YORK—The appointment of Harold R. Schneider as assistant sales manager for agricultural chemicals produced by Allied Chemical's General Chemical division has been announced by John L. Damon, director of agricultural chemicals.

With the division 14 years, Mr. Schneider has been executive assistant for agricultural chemicals for the past four years. Earlier he served as agricultural field manager at General's Philadelphia sales office.

Mr. Schneider holds a bachelor's degree in agriculture from Ohio State University at Columbus.

●

Four Join Crag

NEW YORK — Four new technical representatives have been appointed to the Crag Agricultural Chemicals staff, according to R. H. Wellman, manager of Crag Agricultural Chemicals, Union Carbide Corp. All will be active in sales of Union Carbide's broad-range Sevin insecticide dust and the new Sevin Sprayable formulation introduced to the commercial market this year.

The new personnel include Richard Baughman, from Zanesville, Ohio; J. Charles Blue, from Clifton, Texas; J. W. Durfee, from Amherst, Mass., and Daniel J. Leary, from Waterbury, Conn.

●

L. H. Wright

R. S. McConnell

PROMOTIONS—L. H. Wright, left, and R. S. McConnell have been promoted by Phillips Petroleum Co. Mr. Wright, former assistant sales manager, will be in charge of the administrative supervision of LP-gas and fertilizer sales. Mr. McConnell has been promoted to manager of fertilizer sales.

Market Research Specialist

NEW YORK—Harold L. Ward has joined the American Agricultural Chemical Co. to specialize in market research and development under Dr. G. H. Banham, director of research.

Mr. Ward will assist in coordinating the company's research activities with its over-all operations and objectives, and will work with company customers in developing markets for new products. He will make his headquarters at the company's research facilities at Carteret, N.J.

●

Illinois Representative

STREATOR, ILL.—M. W. Mawhinney, manager of the Smith-Douglass Streator, Ill., plant, has announced the appointment of Laramie J. Clark as sales representative in central Illinois.

Mr. Clark is a native of Illinois and an agricultural graduate of the University of Illinois. Mr. Clark will live in Lincoln and serve Smith-Douglass dealers in central Illinois.

●

To Cover Indiana

STREATOR, ILL.—M. W. Mawhinney, manager of the Smith-Douglass Streator plant, has announced the appointment of Brock L. Hessing as sales representative in northwest Indiana.

Mr. Hessing started with Smith-Douglass as a sales trainee in May, 1960, after graduating from the University of Missouri with a B.S. in agriculture.

●

Joins Potash Staff

ATLANTA, GA.—Harry L. Carroll has joined American Potash & Chemical Corp. as a sales representative, it was announced by William W. Young, southern region sales manager.

Mr. Carroll will headquarter in the regional offices in Atlanta and specialize in sales to the pulp and paper industry.

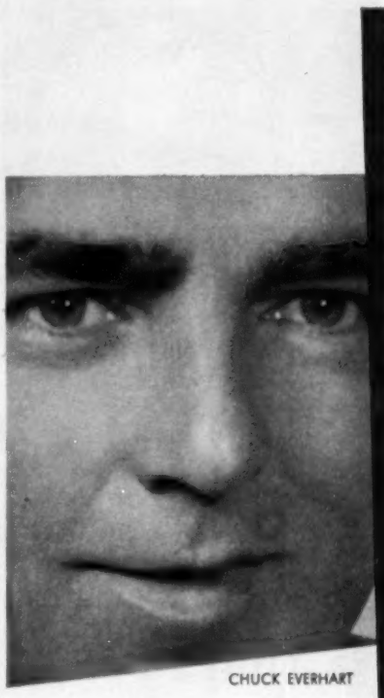
●

PCA Salesmen

WASHINGTON—Potash Company of America has announced the appointment of William John as sales representative for portions of Missouri, Kentucky, Indiana and Illinois, and Lavoid Holloway as sales representative for Texas, Mississippi, Louisiana and Arkansas.

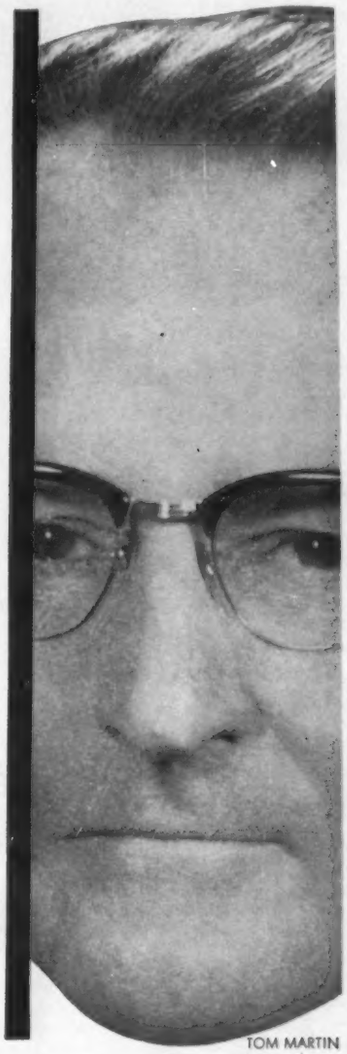
Mr. John, who will report to F. H. Kennedy, midwestern sales manager, will reside in Effingham, Ill. Mr. Holloway will reside in Little Rock and will report to W. H. Appleton, southern sales manager.

Croplife *Want Ads... Get Results*



CHUCK EVERHART

These men help you get the most ...from U.S.I. fertilizer raw materials



TOM MARTIN

There's nothing more impersonal than a tank car sitting on a siding. But if it's a U.S.I. shipment on your siding, you'll find there's nothing impersonal about the service behind the U.S.I. oval. One call can bring a U.S.I. Technical Service Man to your plant . . . promptly. It may be Tom Martin, for instance, or Charles (Chuck) Everhart.

Chances are you know Tom, U.S.I.'s senior field service engineer in your area. Just about every fertilizer manufacturer does, since Tom's an oldtimer in the business... was a fertilizer plant manager himself. Tom knows our products . . . knows your products as well . . . combines this knowledge to your benefit.

Chuck is a long-time fertilizer man too . . . was also a fertilizer plant manager before coming to U.S.I. Chuck is an outgoing guy who likes people, likes working with them on their problems. And there are few problems in the fertilizer field he hasn't tackled at some time.

Tom and Chuck's definition of technical service is as broad as their experience. They'll help on shipping, equipment, unloading and storage problems, any aspect of production involving our chemicals—formulations, equipment recommendations, methods, start-up runs, costs. There's nothing cut-and-dried about their approach either. You'll find they'll listen to your slant on things . . . will be glad to exchange ideas with you.

These men work for you more than they work for us. Try them out if you have any problems on your next shipment of fertilizer raw materials—ammonia, nitrogen solutions, sulfuric or phosphoric acid.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp
99 Park Ave., New York 16, N. Y.
Branches in principal cities

AMMONIA • NITROGEN SOLUTIONS • SULFURIC ACID • PHOSPHORIC ACID

TONNAGE REPORTS

Minnesota

ST. PAUL, MINN.—Fertilizer sales in Minnesota during the fiscal year July 1, 1959, to July 1, 1960, amounted to 502,819 tons, or 7.1% less than the previous year's totals, reported the Minnesota Department of Agriculture. Mixed fertilizer accounted for 408,551 tons of this total.

●

Kansas

TOPEKA, KANSAS — Fertilizer sales in Kansas in fiscal 1959-60 set an all-time high and were more than double the tonnage sold just 10 years ago. Figures released by the control division of the State Board of Agriculture show an increase of 43,193 tons in sales during the fiscal year 1959-60 compared with the preceding year.

It was the second continuous year that a new record was set, the latest reaching 332,861 tons. The report, compiled twice annually from records of manufacturers' sales, shows new sales peaks in both fall 1959 and spring, 1960.

●

West Virginia

CHARLESTON, W. VA.—Reported sales of commercial fertilizer to farmers and other users in West Virginia during the first six months of 1960 amounted to 59,634 tons, according to J. T. Johnson, commissioner of agriculture. This was a decrease of 763 tons from the same period in 1959.

Mixed fertilizers comprised 86% of the total tonnage. Mixture 5-10-10 was the most popular grade.

Arkansas

LITTLE ROCK, ARK. — Sales of fertilizer in Arkansas during July, 1960, amounted to 20,557 tons, compared with 17,619 tons sold during the same month in 1959, reported the Arkansas State Plant Board. Broken down, the sales amounted to 16,766 tons materials and 3,791 tons mixed grades.

Fiscal totals for the year 1959-60 amounted to 362,548 tons compared with 353,129 tons for the fiscal year 1958-59.

●

Florida

TALLAHASSEE, FLA. — Sales of fertilizer in Florida during the fiscal year ending June 30, 1960, amounted to 1,384,115 tons of mixed grades and 770,153 tons of materials for a 2,154,268 ton total, reported the State of Florida Department of Agriculture's Inspection Bureau.

Sales during July, 1960, amounted to 84,214 tons.

Wisconsin

MADISON, WIS. — The Wisconsin State Department of Agriculture reports sales of fertilizer during spring of 1960 amounted to 337,494 tons, as compared with 377,451 tons sold during the similar period a year ago.

●

California

SACRAMENTO — Fertilizer sales in California during the first half of 1960 amounted to 813,116 tons, compared with 803,261 tons for the first half of the same period in 1959, reported the California State Department of Agriculture.

●

New Mexico

UNIVERSITY PARK, N.M. — Fertilizer sales in New Mexico during the period April 1 through June 30, amounted to 15,952 tons, reported the New Mexico Department of Agriculture. Most popular grade was 16-20-0.

Just Say DUVAL That's All

and get both automatically

Continuing research and development assure you of consistently fine quality. Continuing recognition of the industry's need for dependable deliveries assures you of consistently fine service—same day shipment.

DUVAL

MURIATE OF POTASH
SULPHUR

Produced by
DUVAL SULPHUR & POTASH COMPANY

Exclusive Sales Agent
ASHCRAFT-WILKINSON CO.
ATLANTA, GEORGIA

Norfolk, Va. • Charleston, S. C. • Tampa, Fla. • Jackson, Miss. • Columbus, Ohio • Montgomery, Ala. • Des Moines, Iowa

C OF C LISTS FLORIDA'S FERTILIZER ACTIVITY

JACKSONVILLE, FLA. — According to figures compiled by the State Chamber of Commerce, Florida turns out more fertilizers than any other state in the nation.

"The value of shipments from Florida fertilizer manufacturing and mixing plants, including by-products of the industry, came to $165,550,000 in 1958, the last year for which official figures are available," the chamber said in a business summary.

"Florida production accounted for 16% of the national total and was by far larger than any other state," the trade body said.

"Payrolls of Florida plants came to $21,159,000—some 17% of the national figure—and employees numbered 4,670, or 15% of the national total."

Florida also ranked high as a consumer of fertilizer, using a total of 1,296,610 tons of mixed fertilizers during the fiscal year 1958-1959.

Proper Fertilization Boosts Yields for Mississippi Growers

STATE COLLEGE, MISS.—Using the recommended amounts of fertilizer pays off big, says W. R. Thompson, Mississippi Agricultural Extension Service agronomist.

His statement is based on a fertilizer use survey conducted by the extension agronomy department in cooperation with C. B. Duke, county agent at Calhoun City and E. H. Bailey of Starkville, representing the American Potash Institute.

Farmers who used 40 lb. per acre of phosphate and potash averaged 28.5 bu. of soybeans per acre. Those who used less than the recommended amount averaged only 15.2 bu.

On corn, the results were even more outstanding, Mr. Thompson said. Farmers using the recommended 90 lb. of nitrogen, 40 lb. of phosphate and 40 lb. of potash to the acre made an average of 70 bu. per acre. Those who used less than the recommended fertilizer made only 34 bu.

The difference was significant on cotton, too, he said. Farmers who used 75 lb. of nitrogen and 48 lb. each of phosphate and potash averaged 612 lb. lint to the acre. Those who used less fertilizer only made 456 lb.

Potash and phosphate also stepped up hay production. Those farmers who used 60 lb. of each made 2.1 tons of hay to the acre. Those who used less made only 1.7 tons.

Use of 60 lb. of phosphate and potash to the acre almost doubled pasture production where lime had been used. Where no phosphate, potash and lime were used, no clovers were grown in permanent spring grasses.

Texas Dealer Uses Fertilizer Department As Magnet To Draw New Customers

By RUEL McDANIEL
Croplife Special Writer

Garden and lawn fertilizers and plant foods are magnets which draw many new customers to Aus-Tex Garden Supply, a community shopping center store at 6001-3 Burnet Road, Austin, Texas.

The fertilizer and plant food volume amounts to about $15,000 a year, but th's is only a comparatively small part of the total business resulting from the fertilizer department's attracting customers to the store.

"Nearly every day," explains E. D. Wooten, owner, "someone whom we have not seen before comes to the store and asks our advice about what to use on a lawn or around certain flowering plants."

When Mr. Wooten tells the new customer, he generally buys not only the recommended fertilizer or plant food but other garden supplies as well. If the advice turns out well — and it does, because it is based on experience—the customer continues to come back.

The company moved to the Northwest Shopping Center eight years ago when the center was brand-new and the area also was new. Nearly a'l families that lived in the area were new residents, and new housing developments were underway, bringing in more new residents. Soil conditions were new to them and they obviously needed help in the proper growth of lawns, shrubs and flowers. Mr. Wooten prepared himself to g've the needed advice.

At first, when a new resident came in to seek advice about what to plant or how to care for the plants he had, Mr. Wooten asked him to go back home and bring a soil sample.

For two years the company asked home owners of the area to bring in samples of their yard and garden soils for analyzing. Each time Mr. Wooten made an analysis, he made a record of the address of the customer and the analysis of the soil he brought in.

Within two years the company had on record, analyses of soils in practically every block of the new residential area. By that time the analysis work had become so burdensome that it was necessary to curtail it, but at the same time the company had on file sufficient analyses to be able to advise any person living in the area.

"This free soil analys's service was perhaps our best promotion effort," Mr. Wooten declares. "It brought a lot of people to the store for the first time—and nearly all who utilized the free service remain good customers."

So well has the policy of using fertizers and plant foods to attract general garden supply customers worked that the company has had to move into larger quarters twice since going to the shopping center eight years ago.

"And our garden supply business is 1,000% ahead of what it was at the time we moved from downtown out here," Mr. Wooten declares.

The company stocks every line of fertilizer and plant food that is applicable to local conditions, and that is important in building fertilizer volume and making it produce additional garden supply business, Mr. Wooten stresses. "You can't hope to do a profitable fertilizer business if you don't have what people call for," he says.

He makes every effort to be the first in town to stock a new product. Recently, for example, he learned that a reliable manufacturer was bringing out a product to combat lawn grass fungus. He placed an order even before the first of the new items was ready for shipment, and he was the first in town to get any of it.

The county agent heard about it and told some people that the item was availab'e at one garden supply store in town. Others who knew what the product would do likewise publicized it indirectly. The store sold 200 lb. of it in two weeks, and it continues to be a steady seller.

Fertilizers and plant foods make an attractive display near the center of the store. It not only attracts customers but in walking to it, they come in contact with well-displayed impulse garden items.

In addition to stocking all reliable items in various packages as packed by the manufacturer, the company buys certain others in bulk and packages them in small batches for the customer who needs only a small amount.

Mr. Wooten measures out in paper bags, which are neatly closed and glued, such items as rose food (in 3 lb. batches), Dieldrin (3 lb.), Copperas chlordine (1-lb. and 3 lb. bags), and copperas in 6 and 10-lb. bags are handled this way.

He has printed his own labels for a number of these lines and he is going to print up labels for everything thus stocked. The label is in contrasting dark green and white, gives the name of the preparation, the weight, the price and the name of the store.

"The labels help to sell the merchandise," Mr. Wooten declares. "They make the bags more inviting, and they are an aid to customers who like to browse and wait on themselves."

The bags which do not carry the printed labels have tickets which give the name of the product, the weight and the cost.

E. D. WOOTEN, left, owner of the Aus-Tex Garden Supply, Austin, Texas, advises a customer on the proper use of plant food for her lawn and garden. Mr. Wooten keeps records of all the soil needs of the area.

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Among the major purchases made by retail fertilizer dealers is a truck. A truck requires an initial expenditure that is sizable but in addition the expense of its operation and maintenance and driver education are also major cost items.

Retail farm supply dealers who are experienced truck buyers are almost unanimous in agreeing that the one recurring mistake is buying too small a vehicle. Too small a truck causes maintenance costs to rise disproportionately because of the tendency to overload the vehicle, resulting in weakening or breakdown of parts.

The first consideration before buying a truck is its size, says R. N. Raham, a General Motors representative who discussed truck selection at a recent meeting of retail dealers at Ontario Agricultural College, Guelph, Ont. Trucks are selected on the basis of what they are going to carry, he said. Because a wide selection of trucks and truck bodies is on the market, the problem of choosing the right combination is often difficult.

Mr. Raham, too, warned that "overloading diminishes the life of truck components." He cautioned dealers not to buy too small a vehicle, even though truck, tire and

(Turn to COUNTER, page 11)

WHAT'S NEW
IN PRODUCTS · SERVICES · LITERATURE

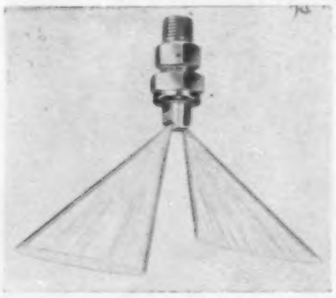
To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6088—Mineral Products Catalog

An eight-page catalog is being offered by Minerals & Chemicals Philipp Corp. The catalog offers complete tabulated information including properties, typical chemical analyses and applications in various industries of its products. Derived from aluminum silicate, attapulgus clay, activated bauxite and limestone, the products are employed in a number of industrial and commercial uses including fertilizers, insecticides and herbicides. For more information, check No. 6088 on the coupon and mail.

No. 6089—Flat Spray Nozzle

Spraying Systems Co. announces a new "TeeJet" spray nozzle offering another type of spray protection. The



unit is supplied as a complete TeeJet spray nozzle or as a TeeJet interchangeable orifice tip for use with any TeeJet spray nozzle assembly. The nozzle projects two flat sprays, separated by an angle of 60°. The forward projected spray provides coverage of leaf areas as the plant is approached. The backward projected spray provides coverage as the plant is passed by. The tapered edges of each individual flat spray pattern result in an overall boom spray pattern that is uniform in distribution, the company says. For details, check No. 6089 on the coupon and mail.

No. 6093—Spreader Body Brochure

A three-color brochure is being offered by Baughman Manufacturing Co. which details information on its new lime and fertilizer spreader body—the "K-5" series. The body is available in three styles with a choice of four types of drives, each designed for a specific job. For copies, check No. 6093 on the coupon and mail.

No. 6096—Bulk Bodies

A new series of bulk bodies has been announced by Simonsen Manufacturing Co. The equipment is available in 5 to 15 ton capacities, in single and tandem models. The units are designed to handle both bulk fertilizer and bulk feed. Capacities of the hydraulically driven augers have been increased. It can unload 1,500 lb. a minute, the company says. Sides are constructed so that there is no need for cross chains and to provide multiple compartment arrangements every 6 in. Full open endgates make easy

to use a pallet tractor for sacked orders, the company says. For more information, check No. 6096 on the coupon and mail.

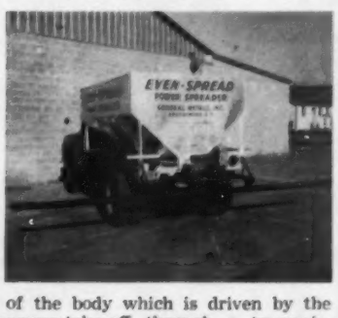
No. 6092—Soil Testing Catalogs

Edwards Laboratory has prepared two catalogs on "Simplex Soil Test Outfits" and other soil testing equipment. One is entitled "Simplex Soil Test Outfits," and the other "Simplex Soil Testing Accessories." One cata-

log describes and illustrates the various company soil test units and material, plus a book on soil testing. The other catalog lists 10 accessories ranging from soil thermometer to moisture meter. For copies, check No. 6092 on the coupon and mail.

No. 6094—Bulk Truck Spreader

General Metals, Inc., announces a line of bulk truck spreaders. Material is spread by the use of distributor tubes. According to the company, wind conditions have little effect on the spreading. The spreader has a chain and slot conveyor in the bottom



of the body which is driven by the power-take-off through a transmission, speed reducer and roller chain. An optional method of drive is off the wheels of the truck. The distributor tubes can be connected and taken off by one person. They are placed on the side of the truck for road travel. Spring loading protects the tubes from damage in case of hitting obstructions. For details, check No. 6094 on the coupon and mail.

No. 6090—Spreader Machine

Hatfield Roto-Werl Spreader Corp. announces the "Agricultural Model" spreader. The unit is similar to the company's original appearance and principle of operation but has been increased to 3 ft. 9 in. in height and employs a different wheel bearing system and tire size. The spreader

covers 10 acres an hour, the company says, and its effective coverage area is up to 35 ft., depending on the density of the material used. An 8 ft. hopper holds up to 1,500 lb. Open design of the distribution rotors eliminates clogging, the company says, and positive action delivers a "double umbrella" pattern. For details, check No. 6090 on the coupon and mail.

No. 6095—Soil Test Publication

Publication of "The Testing World" magazine has been announced by Soiltest, Inc. The publication contains information, stories and pictures on various testing procedures, equipment and products. Copies can be obtained by checking No. 6095 on the coupon and mailing.

No. 6091—Portable Power Digger

A portable power digger that digs 3 in. to 7 in. holes in all types of soils to depths of 32 in. or more has been announced by Speed King Manufacturing Co. Designed for one-man operation, the unit is powered through 20 ft. flexible cables which can be quick-clamped to the 12-volt electrical system of a car, truck or tractor. With the engine running to maintain

Send me information on the items marked:

- ☐ No. 6088—Mineral Products Catalog
- ☐ No. 6089—Flat Spray Nozzle
- ☐ No. 6090—Spreader Machine
- ☐ No. 6091—Portable Power Digger
- ☐ No. 6092—Soil Testing Catalogs
- ☐ No. 6093—Spreader Body Brochure
- ☐ No. 6094—Bulk Truck Spreader
- ☐ No. 6095—Soil Test Publication
- ☐ No. 6096—Bulk Bodies

(PLEASE PRINT OR TYPE) COUPON NOT VALID AFTER 60 DAYS

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

JOHN BLUE

SERIES '80' NITRO-SHOOTER

BLUE Nitro-Shooter—Series 80—is big and versatile. Has 14-foot folding bar, 310-gallon tank, five spring tine applicators in 1-inch or 1¼-inch size. Perfect for Fall or Spring.

Dependable Farm Equipment Since 1886

JOHN BLUE CO., INC.
HUNTSVILLE, ALABAMA

generator charge, it does not drain the vehicle battery, the company says. The digger can be used for tree

planting and fertilizing, fencing and ice drilling. For details, check No. 6091 on the coupon and mail.

Oregon Groups Combine To Fight Range Weeds

THE DALLES, ORE.—Five Wasco County ranchers, two supply cooperatives and a soil conservation district have banded together here for the purpose of fighting range land weeds.

John Frizzell, county extension agent, announced that each of the ranchers is contributing $300 in order to make the fight a good one. The Cooperative Oil & Supply, The Dalles; the Southern Wasco Soil Conservation District, Maupin, and Pacific Supply Cooperative, Portland, have all given money for a two-year Oregon State College research project.

It is the hope of the project sponsors that the results will just be the start towards carrying out an expanded Wasco County range land improvement program.

The research will be aimed at finding a chemical spray solution that will reach the ground and kill such weeds as sage and rabbit brush even though sprayed from 100 ft. or higher. Wasco County's big spray problem is that much of the land is too steep and rough to allow pilots to fly planes or helicopters much lower than 100 ft. off the area they are spraying.

Distributor Meeting

MANCHESTER, IOWA—Approximately 22 distributors and representatives met at the Henderson Manufacturing Co. here recently for the annual "Chief Spreader" distributors' meeting.

Some previously unannounced additions to the Henderson line were shown. Included was a demonstration of the "Model F-100 W.S. Wide-Spread Spreader," showing the accuracy of the 100 ft. wide spread unit.

USDA TO BUILD FACILITY

RIVERSIDE, CAL.—A major research facility of the U.S. Department of Agriculture will be placed on the Riverside campus of the University of California. Entomologists of USDA's Whittier College research unit and two entomologists headquartered in downtown Riverside will occupy a new building to be constructed this fall on the campus. Some 16 researchers will move into the two-story, $168,000 structure when it is completed about Jan. 1, 1961.

COUNTER

(Continued from page 9)

body manufacturers build-in an "overload" factor on their equipment.

Study first what payloads will be carried, the GM representative said. Some payloads, such as fertilizer, are dense materials and weigh considerably more per cubic foot than do fibrous materials.

A term to remember when "truck shopping" is G.V.W. (gross vehicle weight), said Mr. Raham. The truck industry does not speak of truck size in terms of 1-ton, 2-ton or 5-ton any more, he said, because this system implies different meanings to different manufacturers and buyers. Therefore, the phrase G.V.W. has come into common usage.

For example, the dealer may need a truck that can haul about 250 bu. of grain (remembering that grains differ in weight-per-bushel). At 60 lb. per bushel, the payload will be 15,000 lb. Add to the payload, the weight of the body which, in this case we can assume is 3,850 lb. (aluminum bodies weigh less than steel and can therefore carry a heavier payload). The truck chassis will have to carry 18,850 lb. Now the dealer has an idea what size chassis is needed. By adding 18,850 lb. payload weight to 6,500 lb. which is assumed to be chassis weight, a figure of 25,350 lb. gross vehicle weight (G.V.W.) is arrived at.

Since truck manufacturers do not make bodies generally except pick-up boxes, body manufacturers should be consulted about the type of payload to be carried.

Another factor which should be considered is whether the truck is to be used for off- or on-highway operation. This will help determine specifications for the power plant (power components) which consists of the engine, clutch, transmission and rear axle ratio. The dealer may find that for his specific use, a 4-speed transmission may be more desirable than five speeds and that a single speed axle may be preferred to a 2-speed axle. The greater the gear reduction, the greater the power will be. However, traveling speed will be reduced. A 2-speed axle has the advantage of giving the truck better hill climbing power and makes rough roads easier to travel. However, this type of axle needs proper driving care. On small trucks, 2-speed axles generally are not necessary; they are needed most often on large trucks.

Trucks should be loaded evenly so as not to put the payload weight entirely on the rear wheels and axle. Mr. Raham explained that 9% is a good percentage of the payload to place on the front axle and 10% is ideal. The remainder of the weight should be on the back axle. As mentioned previously, the weight carrying components (wheels, axles and frames) are built with an "overload" factor and some trucks with G.V.W. of 20,000 lb. are known to carry up to 30,000 lb. G.V.W. This is not recommended however. Often legal road and bridge restrictions will force a dealer to compromise on the size of his payload and box size.

Proper truck selection requires a careful study by the dealer of all aspects of his hauling problems, summarized Mr. Raham. And after a decision has been made, the truck purchased and put into service, a cost book on each vehicle is strongly recommended.

When you order ANCHOR fertilizers, you get phosphate with a PLUS!

Progressive marketing, local service, powerful brand advertising, promotional help . . . you can have all these extras with Anchor!

And whether you sell Anchor products or use them in your own formulations, you can always count on the highest quality from these outstanding fertilizer materials:

Anchor Treble Superphosphate 45%, pelleted—900 lbs. per ton of available, readily soluble phosphate.

Anchor Treble Superphosphate 45%, ammoniation grade — High nitrogen absorption. High free-acid content. High moisture content.

Liquid Phosphoric Acid — Suitable for soil or water application or for manufacturing complete fertilizers.

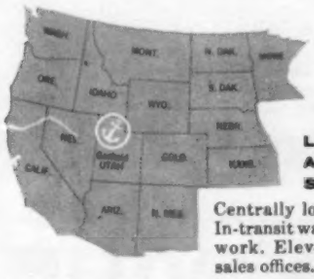
Anchor Ammonium Phosphates — Completely soluble phosphate in four chemically combined analyses: 11-48-0, 16-20-0, 13-39-0 and 16-48-0.

New Anchor Ammonium Nitrate Phosphates are now available in many Western areas. Your Anchor representative can give you full details.

Check these Anchor advantages:

PROGRESSIVE ANCHOR MARKETING

Anchor Custom Service program builds your profits. Backed by a complete promotional package. Other new programs are under constant development.



LOCAL ANCHOR SERVICE

Centrally located plant. In-transit warehouse network. Eleven Western sales offices.

POWERFUL ANCHOR ADVERTISING

Informative ads publicize phosphate results in 13 Western state farm papers, 7 regional farm magazines, including Western edition of *Farm Journal*. Also an extensive outdoor campaign, TV and radio, for *complete* coverage.

AND PRACTICAL ANCHOR PROMOTION

50-50 co-op ad plan for dealers. Useful counter giveaways. New color movie tells fascinating story of phosphate. Prints available for local use.

ANCHOR
PELLETED PHOSPHATE FERTILIZERS

Produced by WESTERN PHOSPHATES, INC., Salt Lake City 10, Utah
Distributed by WILSON & GEO. MEYER & CO., INTERMOUNTAIN
San Francisco • Fresno • Los Angeles • El Centro • Phoenix • Portland • Seattle • Yakima • Twin Falls • Denver • Salt Lake City

FARM SERVICE DATA

EXTENSION SERVICE REPORTS

Side-dressing corn with nitrogen when the crop is 15 to 18 in. high gives the plants this nutrient when they need it most and "sets the table" for the remainder of the growing season, according to Dr. L. S. Robertson, Michigan State University soils scientist.

"Up until the knee-high stage, the corn crop's requirement for nitrogen is relatively low," says Dr. Robertson in a statement summarized by the Midwest division of the National Plant Food Institute. "The small amount of nitrogen needed in the very early growth period can be easily applied in the row fertilizer at planting time."

By side-dressing with nitrogen when the crop needs it, there is less risk of having weeds and soil microbes use up the nitrogen. The corn crop gets the full benefit of it and the nitrogen isn't likely to be leached out.

Dr. Robertson recommends side-dressing at the time of the first cultivation. "And I hope the first cultivation will be the last," he says.

In most cases farmers can put on virtually all the nitrogen they need for corn in one operation, according to Dr. Robertson.

If a farmer is shooting for a 100-bu. per acre crop and he has the kind of soil that needs up to 100 lb. of nitrogen as a side dressing, he can take care of this in a single application.

"A 100-bu. corn yield requires that all the other conditions must be pretty near optimum," Dr. Robertson says. "This means a soil well stocked with phosphate and potash, a stalk population large enough to use all the nutrients available, good cultural practices and control of weeds, insects and diseases."

"If this is the case, I believe that the nitrogen a farmer adds in the row fertilizer at planting time would take care of the crop's requirements up to side-dressing time. Then the side-dressed nitrogen would take over from there on in."

Dr. Robertson says there is little or no difference in corn yield results from the use of various carriers of nitrogen.

"We have been working for 10 to 12 years comparing various kinds of nitrogen and we have found very little difference in the results," he reports.

★

Cotton demonstrations set up in 1958, with emphasis on boll weevil control, are showing results in 1960.

Allen Fulford, Dooly County agricultural agent, who directed the demonstrations, said that while cultural and fertilization practices were followed, the greatest attention was to boll weevil control because the farmers knew that the most limiting factor in cotton production in the county was the prevalence of boll weevils.

One demonstration on 56 acres of cotton averaged a yield of 1,030 lb. lint cotton per acre. The other demonstration was on 190 acres, and the production was 1,235 lb. lint per acre.

These high yields were in comparison with Dooly's previous average of 350 lb. per acre, and with the state average of 443 lb. per acre in 1958, Dooly County average that year was 557 lb. of lint per acre.

The agent said emphasis was placed on using spray instead of dust. He said spray is cheaper than dust, and is effective because it is necessary to keep on schedule with a poisoning program. When depending on dust, a windy day can upset the schedule.

In 1958, the first year of the cotton demonstration only two farmers in the county owned sprayers, whereas in 1959, 60 to 70% of the cotton acreage was sprayed.

Mr. Fulford outlined steps in spraying as follows:

1. Two thrip applications a week apart with straight toxaphene, 1 pt. to the acre early in the season.
2. Started poisoning for overwintering boll weevils as soon as tiny squares started forming. This spray consisted of three applications of toxaphene, 1 qt. per acre, seven days apart.
3. Mid-season applications consisted of applications at five-day intervals. These lasted throughout the season at these intervals.

★

With lower wheat prices farmers need higher yields to hold their own on income. Kansas State University tests show that one of the best ways to increase wheat yields is with fertilizers.

For example, 200 lb. an acre of 16-20-0 on wheat near Hutchinson in 1959 gave 32.6 bu. an acre compared with 13.7 bu. from unfertilized wheat at the same location. About $8 worth of fertilizer added 19 extra bushels of wheat.

At Hutchinson, Mound Valley, and Powhattan superphosphate added from 6 to 18 bu. more wheat an acre; rock phosphate, at the same places, added from 1.5 to 15 bu. an acre to nonfertilized yields. Both were good investments but superphosphate beat rock phosphate.

At Columbus, lime, manure, and phosphate in a legume rotation added 36 extra bushels an acre. Top dressing with nitrogen added another seven bushels, so the total increased wheat yield there was 43 bu. above yields from nonfertilized plots, using the best combination of fertilizers and lime.

Studies on placement of fertilizer indicated that using a combination drill that places fertilizer near the seed is as good or better than any other method. Increased yield from 334 lb. of 15-15-0 placed near the seed was 8 bu. an acre. Increased yield was 5 bu. an acre when the same quantity of 15-15-0 was put 1½ in. to the side and 2 in. below the seed or 1½ in. to the side and at the same level with the seed.

The cheapest insurance a farmer can have against crop failure is proper fertilization, says the Kentucky Department of Feed and Fertilizer.

★

"A farmer does not expect to produce good livestock if he does not feed them," says the department's report. "By the same token he cannot expect to produce a good crop unless he feeds the plants by applying the proper amount and kind of fertilizer."

The Kentucky department's report points out that a return of $3 to $5 can be expected for each $1 invested in proper fertilizer, where fertilizer is needed.

"There is no other business where a man can expect a return of 300 to 500% on the money he invests," the report says.

The department adds this admonition, however:

"It must be realized, however, that fertilizer alone will not produce a crop, but that the best farming practices must be used in conjunction with fertilizer."

Such management practices should include selection of land most suitable for the crop, and the use of well-adapted crop varieties. It should also include good tillage methods, the return to the soil of crop residues to build organic matter, and control methods to curb insects that damage or destroy crops and weeds that compete with growing plants for water and nutrients.

The department says soils should be tested to determine the quantity of nutrients needed to get the best returns from every dollar invested in fertilizer.

★

Results of rice fertilizer studies conducted during 1952 to 1958 have been issued by the University of Arkansas' Agricultural Experiment Station.

Fertilization studies involving rates, timing, and methods of applying solid, gaseous, and liquid fertilizers were conducted at the Rice Branch Experiment Station near Stuttgart and on outlying farms.

Dr. R. L. Beacher, former agronomist, and J. P. Wells, assistant agronomist, summarized results of the experiments as follows:

Up to 100 lb. of nitrogen an acre increased yields of Zenith and Nato rice. The crop often lodged severely from rates higher than 100 lb. of nitrogen.

Bluebonnet 50 and Toro rice yields

Speeds Work

THIS BATTERY operated tape recorder speeds up the observations on legume plants at the University of Illinois Agronomy Research Farm. Carl Hittle, University of Illinois agronomist, demonstrates this research tool. A secretary can transcribe the tape and record the data directly to IBM cards. A single tape will allow eight hours of recording.

You Get "WIDE SPREAD" Performance with BAUGHMAN'S TWIN DISTRIBUTOR K-5

LIME and FERTILIZER SPREADER

World's most efficient spreader body . . . K-5 absolutely guarantees you better trouble-free, money-saving performance for your investment! With this experience-engineered spreader, you can ACCURATELY REGULATE THE NUMBER OF POUNDS SPREAD per acre and BE SURE OF UNIFORM DISTRIBUTION. K-5 features:

- Twin distributors with positive material flow from controllable discharge chute . . for greater spreading efficiency. (Single distributor if you prefer.)
- Lower maintenance cost . . . thanks to the most rugged spreader body ever built.
- Lube-impregnated chain drive, a Baughman exclusive, that positively insures greater corrosion resistance and virtually eliminates chain "freezing."
- Your choice of four drives . . . two conveyors.

WRITE TODAY for illustrated Bulletin A-426A.

Better Service Through Better Engineering.
Service and Parts From 200 Service Branches.

BAUGHMAN MANUFACTURING CO.
310 SHIPMAN ROAD • JERSEYVILLE, ILL.

were frequently increased with applications of up to 160 lb. nitrogen with little or no lodging. "Rates as high as 160 lb. should not be applied on heavy clay soils," the researchers warned.

As to sources of nitrogen, the researchers found that these compounds—ammonium sulfate, urea, anhydrous ammonia, liquid non-pressure fertilizer containing urea and ammonium nitrate, and ammonium phosphate-sulfate or di-ammonium phosphate—were about equally effective when applied at equivalent nitrogen rates any time up to 50 days after seeding. Ammonium nitrate was as effective as the other nitrogen sources for application after the 50-day period, and particularly in early boot stages 70 to 85 days after seeding.

In several of the tests on outlying farms, the response or lack of response to fertilizer could be related to: initial soil fertility shown by soil tests, past cropping and fertilizer history, and management practices used on the test site, Dr. Beacher and Mr. Wells reported.

★

Research at South Dakota State College has shown that soils in eastern South Dakota have lost half of the nitrogen they once contained and at least 25% of the phosphorus, according to Ed Williamson, extension service soils specialist. "And the phosphorus that remains is tied up so tightly that it is unavailable for plant use," he said. These soil nutrients have been lost during the last 75 years of cultivation.

Most of these unfertilized soils can now release only 45 to 55 lb. of available nitrogen in any one cropping year. Originally they released as much as 85 to 100 lb. of nitrogen in a single year.

This means that any plant food applied should contain adequate amounts of these ingredients, says Mr. Williamson.

Unless a plant food containing adequate amounts of nitrogen and phosphorus is applied the farmer takes the chance of starving a crop by withholding the kind of plant food needed.

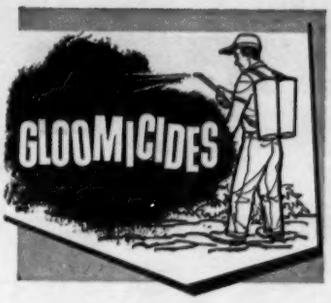
Corn, for example, requires 1½ lb. of nitrogen and ½ lb. of phosphorus for each bushel of production. Soils capable of releasing 45 to 55 lb. of nitrogen and 20 to 25 lb. of phosphorus during the growing season will produce a 30 to 35 bu. corn crop. Yields of 55 to 60 bu. an acre are impossible unless nitrogen and phosphorus are applied. Farmers with this kind of land will have to apply 35 to 40 lb. of nitrogen and from 15 to 20 lb. of phosphorus if they want 55 to 60 bu. corn.

★

"Changing the analysis of fertilizer to fit the needs of the soil for production of cotton and corn brings higher yields," says D. G. Jordan, prominent Lamar County Alabama farmer.

Haskell Lumpkin, Lamar County farm agent, commented: "Mr. Jordan says he has proof that soil testing pays. When he started taking soil samples on his farm three years ago, he found that he needed 100 to 150 lb. less fertilizer than he had been using. The sample results also called for a little less fertilizer under corn but more nitrogen side-dressing. Thus fertilizer costs were less for cotton and about the same for corn. However, he has averaged 70 lb. of lint and 10 to 20 bu. of corn more than was made before soil testing.

"Mr. Jordan produced 10 bales of cotton on eight acres last year. This spring, during Lamar County's soil fertility campaign, Mr. Jordan sent samples to Auburn University from 12 fields. He plans to continue to test the soil on his farm every three years."



I got to thinking yesterday—you know how you do when the television won't work.

◆ ◆ ◆

A dapper city dude bought an old broken-down horse from a cattleman who was glad to get rid of it for a pittance.

"What in the world are you planning to do with that old nag?" the cattleman asked.

"I'm going to race him," the dude said.

"Well," the cattleman said, "you'll win."

◆ ◆ ◆

The foreman was astonished to see one of his laborers on a construction job pulling his wheelbarrow instead of pushing it.

"What's the idea," he demanded, "of pulling your wheelbarrow?"

"Can't stand the sight of it!" came the reply.

◆ ◆ ◆

Prisoner to fellow inmate: I was making big money—about a quarter of an inch too big.

◆ ◆ ◆

The sports car owner was giving his friend the first ride in a new foreign import which was low-slung. After they had been driving a while the friend appeared to be puzzled, so the driver asked him what was wrong.

"I can't figure out what that long wall is we've been passing."

"That's no wall," snapped the driver. "That's the curb."

◆ ◆ ◆

A salesman is a fellow who wishes he had as much fun at sales meetings as his wife thinks he does.

◆ ◆ ◆

After months at sea the sailor headed for the nearest tavern. Pointing to a patron lying on the floor, he told the bartender: "Give me a shot of that!"

◆ ◆ ◆

A small town is a place where everyone knows what everyone else is doing but still reads the local paper to see if they have been caught at it.

Why you'll sell more

Grace Urea Prills

This Spring

Its versatility and superiority help increase your volume and profits

You can recommend Grace Urea Prills for all crops, wherever a nitrogen fertilizer is needed.

In the spring, for example, these free-flowing, leach-resistant prills are ideal for preplant application. That's because they speed decomposition of stubble or plant residues being turned under.

And, of course, your customers can use Grace Urea Prills profitably for:

- √ Sidedressing or topdressing
- √ Foliar application
- √ Application in irrigation water
- √ Spring fertilization of pastures

You help your customers as well as yourself when you promote the increased use of Grace Urea Prills. They offer your farmers 4½ pounds of nitrogen for each ten pounds applied—the most nitrogen per pound in solid form... *guaranteed* 45%.

To build up the nitrogen content in *liquid* fertilizers, use either Agricultural Grade Grace Crystal Urea or Grace Urea Prills. Both dissolve readily, *stay* dissolved.

Grace Chemical Company

A DIVISION OF W. R. GRACE & CO.

MEMPHIS, TENN.

Oscar & Pat Visit The Miller Publishing Co.

By AL P. NELSON
Croplife Special Writer

A big bus pulled into the Minneapolis bus station two hours late, due to an engine breakdown in southern Minnesota. Out of the bus, their bones aching, came Pat and Nora McGillicuddy, and Oscar and Minnie Schoenfeld. The fertilizer dealers and their wives were on the way to attend the big Minnesota State Fair. In addition to his suitcase, Pat carried his Polaroid camera.

"Ach," said Oscar disgustedly, "we shouldt not have come. I'm sorry I agreedt to the idea."

"Well, we'd have been here a lot sooner," snapped lanky, hatless Pat McGillicuddy, "if you would have agreed to fly or even take a train."

"Ach, how did I know the bus would break down?" Oscar retorted sharply. "That low fare—$8.78 each, round trip—is the cheapest. We can't schtart throwink money away, McGillicuddy."

"Now, now," said Nora sweetly. "You men agreed on a truce for this state fair trip. Both of you can learn a lot about the latest agricultural developments. And Minnie and I can shop in the stores, can't we, Minnie?"

Nervously Minnie nodded assent.

"Well," Pat said, "let's get to the hotel and freshen up after this long bus trip. Then to the fair."

"Hotel!" echoed Oscar in a shocked tone. "They cost too much! Let's go look for a rooming house for the night. Let's safe a little money."

Pat sighed. "Oscar, I have reserved rooms at the Remington for us. That's one of the best hotels. We might meet some of our suppliers. We wouldn't want them to know we stayed at a rooming house."

"Why not?" Oscar asked belligerently. "What's wrong with a rooming house?"

"Here's a taxi," Pat said, as a yellow car approached.

"Taxi!" growled Oscar. "Ach, let's walk, and safe the fare to help pay for the hotel room." "Walk? It's 10 blocks!"

Oscar snorted. "We can make it, can't we, Minnie?"

But Nora protested and Minnie weakly agreed. Oscar was finally persuaded and in a matter of minutes, the group was at the Remington Hotel.

"I'll register for us," Pat said quickly.

"Ach, and get the cheapest rooms!" Oscar warned so loudly that a number of guests turned to look at him.

When the sleek-haired bellboy tried to take Oscar's suitcase, he said sharply, "Ach, I kin carry it myself." The bellboy looked surprised, but said nothing, then took Pat's case which was on the floor.

Pat was silent as the group went in the elevator.

Inside Oscar demanded, "How much is the room?"

"It's very reasonable," Pat replied.

The elevator stopped at the fifth floor, and the group got out. Oscar did not give the bellboy a tip, and when the fellow left, there was a frown on his face.

"Ooh, Oscar!" cried Minnie. "Look! A pink bathroom, with a tub and shower."

Oscar came rushing. "Ach, a tub and shower that Irisher gets. Maybe he thinks we needt both. We could get along with a room without bath. What's the matter with walkink down the hall? I'll go tell that Irisher now to change rooms."

"Oh, Oscar, no. Can't we have this luxury just once? I'll shop hard for extra bargains when we get home to pay for it."

Oscar sat in a chair and began to sulk. He continued to sulk when Minnie and he met Nora and Pat in the lobby a few minutes later.

"Well, Oscar," said Pat jauntily, "let's take a bus to the fair instead of a taxi."

Oscar brightened. "Ach, now you are talkin', Pat. I can't belief it's you."

Nora looked at Pat and winked.

They toured the fair in half a day, and met the supplier who had furnished them with passes. They visited the poultry, dairy and livestock exhibits, saw machinery row, looked at the prize corn, vegetables and fruits. Pat shot some pictures with his Polaroid.

He even shot a picture of Nora, Minnie and the protesting Oscar standing at the fruit displays. Oscar looked so sour that Pat decided not to use the picture in an ad as he had intended.

Tired, they got back to the hotel just before dusk. Pat wanted the group to dine at the hotel, but Oscar complained. "Ach, we spent enuf today already," he growled. "Minnie, let's go look for a cafeteria. It's cheaper."

So Pat gave in and they wandered eight blocks until they found a cafeteria. Oscar ate so much his check came to $1.98, highest of the four. "Ach, prices are too high," he said. "I like the country better."

On the way back to the hotel on a bus, Pat said, "Well, let's get a good night's sleep, Oscar, and then visit Croplife offices in the morning. They have a standing invitation for any fertilizer dealer to visit them, and I've often wanted to see what the place looks like."

"Ach, they'll try to sell us a five-year subscription," Oscar growled. "Let's start for home in the morning."

"We can't go back on the bus earlier than 2 p.m. tomorrow," Pat said, "so we m'ght as well visit Croplife. They won't high-pressure us. The women can shop while we're gone."

The next morning after breakfast, Pat and a grumbling Oscar left for the printing plant of Miller Publishing Co., publisher of Croplife and several other business magazines. "Minnie," shouted Oscar as the taxi drove away from the hotel, "don't spendt too much in the stores. Remember, money is always in style."

As the taxi purred up Wayzata Boulevard toward the Miller Publishing Co. headquarters, Oscar nervously watched the taxi register. "Ach, it's 85¢ already. McGillicuddy, how you spendt money. Hasn't Croplife got a delivery truck they couldt sendt down for us?"

Pat ignored the remark. "Oscar, I'm hoping Croplife has lots of idea files. I can't wait until I look for new sales promotion and advertising ideas."

Oscar's face flushed a deep red. "Andt I will look for cost cutting articles. I will throw one at you effery time you try to promote something. Let's safe some money for a change —not throw it away all the time."

"Ah, here we are," Pat said, giving the taxi driver three dollars. "Keep the change, my good man."

Oscar bit his lips and rolled his eyes skyward at this extravagance. Then shortly the two dealers were at the information desk and switchboard area in the spacious one-story building.

"We'd like to see the president, Milt Kihlstrum," smiled Pat, turning his charm on the receptionist.

She smiled back. "First office to the right," she said pleasantly. "He just came in."

As the two men walked toward the president's office, Oscar's eyes roved about. "Ach, such a bik building," he said. "Andt so many typewriters and people workink. They spendt money chust like you, McGillicuddy. I will tell them they shouldt cut the price of their subscriptions."

"Ssh," said Pat. "Let's be courteous if we want them to show us the plant."

Milt Kihlstrum, a handsome grey-haired man, sat behind a wide walnut desk which was practically bare of papers, except for a memoranda folder.

"Ach," said Oscar approvingly. "Look, Irisher. Here's a man who keeps his desk clean. You shouldt do the same."

"Well, well," smiled Mr. Kihlstrum. "Oscar and Pat! It's a pleasure to meet you boys in the flesh. How are things in your section of the country?"

"Good," said Pat enthusiastically. "Our sales are up 12% over last year."

"And our collections are 20% behindt last year!" Oscar said gruffly. "The trouble with this country is efferbody spendts too much money,

W. E. Lingren (left), executive vice president, and Milton B. Kihlstrum, president, The Miller Publishing Co., check over a copy of Croplife hot off the press.

MERCHANDISING expert on the Croplife staff is Emmet Hoffman. Here Mr. Hoffman receives some material from his secretary, Nancy Allen.

PLANNING a page layout for an issue of Croplife are Lawrence A. Long, left, editor, and Donald Neth, managing editor.

to improve farm spraying
SPRAYING SYSTEMS
SPRAY NOZZLES
and related equipment
for better performance
TeeJet Spray Nozzles with choice of over 400 interchangeable orifice tips.
for easier installation
Split-Eyelet TeeJet Connectors. Simplify nozzle and drop pipe installation.
for better control
DirectoValves for fast, accurate spray selection. Diaphragm pressure relief valves and all other accessories.
Most components in choice of brass, aluminum, Nylon and stainless steel for all spraying needs.
Write for Catalog 30.
SPRAYING SYSTEMS CO.
3214 Randolph St.
Bellwood, Illinois

Mr. Kihlstrum, and nobody thinks about safing it."

"Well, perhaps you are right," laughed Mr. Kihlstrum, "but we have to spend a little to get it back with interest, I guess." The president then suggested that the visitors might like to meet Croplife staff members, the fellows who actually produce the publication and handle the multitudinous details that go into each issue. "I believe all our editors are in today and they would be very happy to see you two," said Mr. Kihlstrum. "Let me introduce you to Bill Lingren, our executive vice president, who will be happy to escort you around the premises."

A buzz on the inter-com brought Mr. Lingren to the office and everybody was introduced again. Mr. Lingren suggested that the threesome should visit the editorial department and let the men there get acquainted with Oscar and Pat in person.

"Would it be all right if I take some pictures of some of these people?" asked Pat. "I brought my trusty Polaroid along and would like to have some pictures as a memento of our visit here." Mr. Lingren assured him this would not only be acceptable, but he would introduce him to all the staffers and assist in getting pictures of portions of the mechanical department as well.

As luck would have it, all of the editors were in for the day, a rather unusual occurrence since some staffer is usually out covering a meeting or preparing a report in the field. Thus, Oscar and Pat were happy to sit down briefly and chat with Larry Long, editor, and Don Neth, managing editor of Croplife, as the two were preparing a layout for the next edition. During the conversation, Emmet Hoffman came by and expressed his delight in meeting Oscar and Pat since he had edited so much copy about them. "I didn't think I would have the opportunity of meeting you fellows like this," Mr. Hoffman said.

HOME OFFICE of The Miller Publishing Co. is at 2501 Wayzata Blvd., Minneapolis. The one-story, modern brick structure houses the editorial, advertising and printing operations for a number of business publications, including Croplife. The company also has branch offices in other parts of the U.S.

CROPLIFE editorial staff member, James L. Engfer, left, discusses the makeup of the magazine with Delbert Rudolph, composing room foreman. Croplife is edited, made up and printed at the home office.

"I surely like the merchandising material you put in Croplife. I get quite a number of ideas on how to sell more fertilizers and pesticides th.ough reading this material," said Pat.

"Ya, but you shouldt carry more instructions on how to collect for the schtuff you sell," put in Oscar. "McGillicuddy here is always giffing out with ideas on how to sell schtuff and spend money advertising, but he comes out a little short on the collection end. I believe in collecting the money and putting it in the bank so we will haff it for the rainy day."

"Yes, Oscar and I have little in common as to ideas on business," Pat added. "But I believe that our combination is a good one—I am constantly working on the selling end and Oscar sees to it that there is enough money in the till to meet the payroll on Saturday nights. I guess that is why our business has prospered even though we don't always agree."

The three editors and the visitors covered a great deal of ground concerning merchandising and prospects for sales the next season, and then continued the tour over in the direction of the advertising production department where records are kept on orders and ad schedules. Here they chatted briefly with Bruce Kirkpatrick, Jerry Whiting, Carl Vetter, and some of the young lady clerks involved in the department and asked numerous questions about the use of the teletype, branch offices in Chicago, Kansas City, New York, and Washington, D.C., as well as the West Coast, and the visitors seemed quite impressed with the procedure.

By now, the presence of the two visitors, plus the rather loud conversation, had attracted the attention

a sensational

BREAK-THROUGH

in design and engineering!

DO-IT-YOURSELF

fertilizing equipment which you can rent to your customers . . . spreads up to an acre per minute.

- Hauls and spreads fertilizer quickly and efficiently
- 45 foot spread pattern
- Investment in this machine will move up to 600% more fertilizer

TYLER F-2 SPREADER*

*PATENT PENDING

SPECIFICATIONS

Body Weight Approx.	1300 lbs.
Hopper Dimensions	60" x 84"
Wheel Track	74 inches
Axle Rating	4000# each axle
Type Axle	Tandem Torsion Spring
Fans	Angled Twin 19 in. Dia.
Wheel Bearing	Sealed Timkin Bearing
Capacity	2½ Ton
With Body Extension	19 in. 4 Ton
Spread Pattern	Approx. 45 Ft.
Spread Capacity Pr. Hr.	30-60 Acres
Field Speeds	
6 M.P.H.	30 Acres Pr. Hr.
12 M.P.H.	60 Acres Pr. Hr.
18 M.P.H.	90 Acres Pr. Hr.
Highway Speeds	up to 60 M.P.H.

distributor inquiries welcome!

Tyler MANUFACTURING COMPANY

Phone Viking 2-8581

East Highway 12 Benson, Minn.

CHARLES SAPPER, foreground, runs the extensive IBM department for The Miller Publishing Co. Circulation and research information is kept on the IBM cards.

of others around the work area and secretaries could be seen looking at each other and smiling at the discussion being carried on by the two men. Jim Engfer, Croplife editorial staffer, was at his desk re-loading a camera in preparation for taking some pictures at an up-coming meeting and Pat stepped over and introduced himself. "I couldn't help noticing your camera," Pat said. "I like my Polaroid but suspect this one of yours has a little better lens perhaps." Mr. Engfer described the workings of his camera to Pat and the two talked on for a few minutes before moving out to the composing room at the east end of the building. "Why, I didn't know you did all your own typesetting and press work here," said Pat. "All these typesetting machines and printers look like a regular newspaper plant," he added. The staffers who had now joined the procession, explained to both Oscar and Pat that Croplife has a number of sister publications, nearly all of which are published at the home office in M nneapolis.

Looking down the row of five presses, Oscar was bug-eyed. "These things must cost a fortune," he exclaimed. However, the noise of the presses, folding machines, and other operational equipment in the press room and bindery drowned out his further comments and Mr. Lingren, leading the tour, had to raise his voice in order to be heard above the din.

THE ADVERTISING production staff is based in the Minneapolis office. Here Carl R. Vetter, advertising department manager, studies the ad schedules for a coming Croplife issue.

"I want to show you our IBM department where all the circulation records and statistical information on readers is kept," Mr. Lingren told them. "Since making this installation a little over a year ago, we have put all the circulation addressing, direct mail work, and all types of statistical information in this department. Formerly, we had only a fraction of this much information on the trades we cover but this department, in connection with the circulation people, maintains a very much up-to-date record of the agricultural chemical field."

Pat had already taken a number of photographs previous to the IBM room visit and he asked if he might also take a snapshot of Chuck Sapper and his staff in this department. Certainly, Mr. Lingren said, and reminded Pat once more that he should feel free to take pictures anywhere in the building that he wished. Pat thanked him and proceeded to take more pictures and amused the subjects by showing them the prints shortly after the pictures had been taken. Oscar, however, stubbornly refused to appear in any of the shots. "I don't want to waste film," he explained.

"While you are going around, I want you to meet our circulation manager, Harry Dunn, and also our research department people," Mr. Lingren suggested. The group then hiked up the long aisle-way to meet these people and to exchange pleasantries with one and all.

"No tour would be complete without taking you into our clubroom for a little session," said Mr. Lingren pleasantly. "We want to show you how our company has hitched progress to long tradition and is moving ahead."

The group then moved into the spacious clubroom and the mouths of both Oscar and Pat dropped as they walked through the stained glass doors.

"Ach," Oscar breathed. "This makes me think of rathskellars back in the old country. Now that is really something worthwhile. The furniture and other things in here look old and maybe the company was schmart in not spending too much for fancy furniture in here."

By now it was getting a little late and Pat looked at his watch with surprise. "Well, it's time we get back to the hotel and check out," he said pleasantly. "Thanks a lot, fellows, for showing us how Croplife is edited and printed. We'll think of this wonderful visit each time we get an issue. Now, where in the world is Oscar?"

Oscar was coming up the aisle past Jim Engfer's and Emmet Hoffman's desks, a frown on his face. In one hand he held a large number of paper clips and in the other a bunch of rubber bands.

"Ach, Mr. Long," he said to the editor, "I can see that all the men and women here work hardt. They are very busy all the time. But they throw too many paper clips, rubber bands and carbon paper into the wastebaskets. Ach, it makes me sick."

"Well, Oscar, we work under pressure here most of the time. We don't mean to throw away such things, but I suppose once in a while some paper clips and rubber bands do get into the wastebaskets by mistake," the staffer replied.

"You shouldt safe more on supplies," Oscar said sharply. "It is the little things that count up. All those agricultural bulletins you men throw away couldt be stapled together and used for scratch paper. Andt carbons. You fellows use them only once. Ach, that shouldt be changed."

Pat jerked Oscar's arm. "Oscar," he whispered, "these fellows are our hosts. They've been nice to us and showed us the entire plant. Let's hurry now. We've got to get to the hotel and check out and get to the bus at 2 p.m."

"Ach, we don't haf to leave until three," Oscar said. "That good looking Croplife reporter over there is leafing for a Des Moines convention at 3 o'clock. I asked him to let us ride back with him in his car. Then we can turn in our return bus tickets and get some cash back. Irisher, we are goink home on Croplife gas! That's the way to safe money."

Well satisfied, and with a trace of a smile on his face, Oscar moved pompously down the aisle to look over a few wastebaskets he had missed on his prior excursion.

16 Georgia Counties Hold Demonstrations

DAWSON, GA. — Farmers in at least 16 Georgia counties, including Terrell, are holding community-wide cotton production demonstrations this year, placing special emphasis on cotton insect control. They are also using recommended fertilization and cultivation practices.

The community-wide idea started in the Carnegie Community of Randol-Calhoun counties in 1959, when the farmers agreed to use recommended production practices including insect control.

Counties with community-wide demonstrations include Bartow, Calhoun, Chatooga, Macon, Madison, Meriwether, Mitchell, Pickens, Pike, Randolph, Rockdale, Schley, Seminole, Sumter, Terrell and White.

Illinois Agronomy Day

URBANA, ILL. — Corn and soybeans will be the crops featured at the 1960 University of Illinois Agronomy Day on Sept. 14, M. B. Russell, head of the department announced.

At this time of year, these crops are at the ideal stage for seeing differences that occur as the crop matures. Visitors will see the latest research in progress on special uses for corn, high fertility in corn production, weed competition and its effect on corn yields, and tetraploid corn, a type with a genetic make-up different from that of regular corn.

GET THE FERTILIZER BUSINESS YOU USUALLY MISS

USE AS A CUSTOM SPREADER OR RENTAL UNIT

MODEL T410 TRAILER SPREADER

Now, liquid and anhydrous fertilizer dealers can extend their season into the dry fertilizer period with a minimum of cost for equipment. This inexpensive, tractor-drawn, trailer spreader will also help increase sales by operating in growing crops, and in fields too soft for bulk trucks.

SPECIFICATIONS
Length - 10 ft. Capacity - 142 cu. ft.
Load - 4 tons. Width of spread - 24 ft.
Rate of Spread - 75 lbs. per acre and up.
No extra charge for installing on your wagon chassis

TWO COMPARTMENT BOX OPTIONAL

- Has same quality construction features as the popular Simonsen Truck Spreader.
- Comes complete with hydraulic fan drive, all weather wheel drive, spreader hoods, catwalks and telescoping PTO shaft.
- Easy to operate — just attach to any tractor with standard PTO, set endgate for amount per acre, and you're ready to spread.

WRITE WIRE or PHONE COLLECT for further information about the T410, plus a full line of other bulk fertilizer bodies, bulk feed bodies, bulk and sack bodies, unloaders and the Feedilizer, a bulk feed, bulk fertilizer body.

SIMONSEN MANUFACTURING CO.
DEPT. CL QUIMBY, IOWA PHONE 72

Expert Tells Story of How Locust Swarms In Central America Were Put Under Control

ROME, ITALY—The saga of four years' intensive international cooperation to bring under control the swarming locusts which until recently plagued much of Central America, is described by H. J. Bredo, Food and Agriculture Organization locust control expert who was assigned to work with the Inter-American Organization for Plant and Animal Protection. He reports that between 1948 and 1950 locusts were estimated to have destroyed more than 50% of food crops in Nicaragua. The locusts were destroying grain crops like rice, sorghum and millet and attacking other food crops like plantains and beans in Mexico, Panama, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

"The first step of the campaign was to investigate the origin of the swarms, then to study the biology of the locusts and, finally, to determine the best scientific and technical ways of preventing the locusts from swarming," said Mr. Bredo.

"In order to carry out investigations, I traveled through every part of the five republics of Central America, Panama and into Mexico," Mr. Bredo said. "In all I traveled 742 days by horse, by foot and by jeep and succeeded in mapping the permanent breeding places of the insects. I found three main sources, the first along the Pacific coast extending from Costa Rica to Guatemala, the second at the source of the Rio Aguan in Honduras, and the third in the peninsula of Yucatan, Mexico.

"The American locust is of the same family as the desert locust but is a different species," said Mr. Bredo. "It breeds twice a year and is an age-old scourge in the area. In fact, locust infestations were recorded by the first Spaniards to land in Central America and there are actual records going back to 1542.

"But while the American locust has been a pest for such a long time, it is only in recent years that swarms have become a serious danger," he continued. "You may say that the danger is man-made because the more man has cultivated the countries there, the more the locusts have bred and swarmed. The increase in food production has provided them with the vegetation required for their distribution and swarm formation. However, now that the breeding grounds have been determined and anti-locust control measures organized, the locusts have been brought under control.

"Most of the control measures have been carried out by dusting with insecticides, with ground equipment, and occasionally from airplanes. Control may be improved in efficiency and reduced in cost by the introduction of liquid spraying," he says.

"One development necessary to ensure that control measures are continued by the governments concerned, and that the longer term work designed to prevent the reoccurrence of swarms is carried out, is the training of local scientific and technical personnel," Mr. Bredo said. "We have already given training, through an FAO fellowship, to one officer of the staff of the International Inter-American Organization for Plant and Animal Protection. Now we hope to provide fellowships for training the staff of the national anti-locust control departments."

Mr. Bredo will return to Central America to complete his assignment after spending home leave in Belgium. He has spent more than 30 years in anti-locust work, 27 of them in Africa where he was chiefly responsible for organizing the first international locust laboratory in 1938 in Rhodesia which he directed for 15 years.

Fertilizer Control Officials Announce Meeting Program

WASHINGTON—The annual meeting of the Association of American Fertilizer Control Officials will be held in Washington, Oct. 13-14, announced B. D. Cloaninger, secretary-treasurer.

Included on the two-day program are the following discussions:

- "The Role of Fertilizer in a Changing Agriculture," by Dr. Charles E. Kellogg, U.S. Department of Agriculture, Washington.
- "Changes in Fertilizer Technology to Meet Agricultural Demands," by Dr. Rodger C. Smith, Southern States Farmers' Exchange, Inc., West Springfield, Mass.
- "The Role of Soil Testing in a Changing Fertilizer and Agricultural Program," by Dr. Ralph L. Wehunt, TVA, Knoxville, Md.
- "Report on a Survey on Bulk Distribution of Fertilizer," by Dr. Walter D. Scholl, USDA, Beltsville, Md.
- "Preliminary Report of Non-Farm Use of Fertilizers," by A. H. Mehring, USDA, Beltsville.
- "Numerical Characterization of Fertilizer Company Records," by Dr. William Duncan, University of Kentucky.

Fish, Wildlife Study Expands

WASHINGTON—The Fish & Wildlife Service is continuing to expand its program of study on the relations of pesticide and animals, birds and fish. Almost $600,000 has been appropriated for research.

In addition to this sum the service has $700,000 for the construction of a pesticide-disease laboratory at the Patuxent Wildlife Research Center, Laurel, Md., due to start soon.

The total amount is about half of what was authorized for the program last year.

According to W. W. Dykstra, research staff assistant, the new funds will enable the service to expand its work on laboratory and pen studies in order to compile toxicological data on commonly used pesticides. Mr. Dykstra says that at present, very little is known about the effects of the pesticides on survival and reproduction of many forms of fish and wildlife.

New bird, mammal and fish species will be included in the studies, and additional emphasis will be placed on herbicide and fungicide research, Mr. Dykstra said.

Other work which is scheduled by the service includes field testing of new chemicals that show signs of less hazard. The service intends to work closer with research chemists and entomologists, a spokesman said.

SPRAYING PAYS

DES MOINES, IOWA—"A cattle spray program for grub control that we initiated last year, netted us a return of $15 per head," reports Herman Shoup, manager of the 2,000-acre South Amana farm at South Amana, Iowa. He reports the spray program so successful that the experiment will probably be followed by the six other Amana farms. Spraying at the South Amana farm was done last November, approximately 100 animals sprayed per hour, and spraying done only once.

George Kuhnle, herd manager at the farm, said getting rid of grubs added 50 lb. to the animal. The Hereford herd is kept at approximately 350 head. The South Amana farm breeds and raises its own cattle.

Plant as Whole Unit Stressed at Conference

STILLWATER, OKLA. — Plant scientists must remember the importance of the plant as a whole unit, H. B. Tukey, head of the Michigan State University horticulture department, told researchers attending a symposium on plant growth regulators at Oklahoma State University recently.

"A number of years ago," Dr. Tukey said, "Dr. Edmund Sinnott used a simile which is still apt in pointing out that no amount of study of a 5¢ coin would reveal why when it was placed in a telephone box it got the operator, and why when placed in a juke box, it got music.

"As we consider the responses of plants to chemical regulators, we must keep this point of view in mind. Responses are often more dependent upon the nature of the plant and its tissues and organs than upon the nature of the chemical applied.

"In general, plant regulators act to stimulate or inhibit, accelerate or retard processes which are characteristic of the tissue, organ, or plant in question.

"The main purpose of this symposium has been to show the relation of plant regulators to the plant as a whole. We stressed not only the unity of the parts of the individual but also the unity of the individual with its environment.

"We are in an age of extreme specialization. We have made great progress by probing deeper and deeper into the fundamentals of plant behavior. We have gone from the purely descriptive of a century ago, through specialized studies of individual organs, then tissues, then individual cells, then parts of the cell, and finally to specific chemicals.

"My point is that we must also not forget the whole organism—the plant. Otherwise, there would be no need for plant physiology, as such, or for horticulture, as such."

MURIATE OF POTASH for the PLANT FOOD INDUSTRY

THIS symbol stands for high-grade uniform, coarse and granular Muriate of Potash (60% K_2O minimum). Southwest Potash Corporation provides a dependable supply of HIGH-K* Muriate for the plant food industry.

*Trade Mark

Southwest Potash Corporation

1270 AVENUE OF THE AMERICAS NEW YORK 20, N. Y.

CONFERENCE

(Continued from page 1)

plish this, a high quality fertilizer must be applied at the right time, in the right way and in the right amount to soils that are properly limed. Soil tests offer the most practical approach to determining the fertilizer needs of each field for the crop desired. In lieu of a soil test, general fertilizer recommendations are the best guide."

Reporting recent research about economic rates of fertilizer, Dr. Lancaster said, "Mississippi farmers annually spend some 35 million dollars for fertilizer, which, when coupled with other good farming practices, produce increases in yield worth many times the cost of the fertilizer." Discussing "How Efficiently Are Fertilizers Used," he covered in his report, soil characteristics, the nutrient and its source, application practices, weather conditions, disease and insects, cultural practices and crop and/or cropping system, accompanying each with graphic charts.

Summarizing, Dr. Lancaster said, "Farmers are losing money because of improper application practices—poor timing, improper rates and placement—and in some cases because they are using an inferior source of fertilizer."

Leaders in the industry emphasized that the "Fertilizer industry will have a lot to do with maintaining the high standard of living enjoyed by the American people as well as keeping farm production economically sound."

Underscoring reports made earlier by extension service and experiment station agronomists, W. F. Price, general manager, Swift & Co., Agricultural Chemical Division, Chicago, declared, "Farmers generally are losing profits by not using recommended rates of fertilizers. Georgia farmers, for instance, lose $264,000,000 annually by not following the recommendations of experiment station reports."

Mr. Price, who has had 36 years in the plant food business, said, "We in the industry all face the same major problems—whether in Mississippi or in Illinois.

"I believe the experience of the last few years has convinced even the most skeptical that we have come face to face with a real selling job. No industry in the world has a better, a more constructive sales story to tell than we—how just a litle can produce so much more—but how many of us use that story?"

Amplifying on his theme "So Much for So Little," Mr. Price said, "Potash is mined at depths of 1,200 ft. below the surface. It is mined mechanically, purified by complex flotation in brine, hauled 2,000 miles or more, and blended in modern granulators—all to supply the potash required to produce 100 bu. of corn for about $4."

Discussing the fact that a job of educating the banker to the needs of the farmer is vital, he said, "We have the soundest and most economical case of any segment of the agricultural industry to persuade the banker to travel down the same road with us by loaning the farmer money for a sound fertility program."

Noting that the farmer is the "keystone to increased production and increased profits," he said, "We must make the farmer realize that plant food is a yearly investment and not an incidental expense that is to be cut or completely eliminated when farm prices are not as high as he would like them.

"On the average for the U.S., the farmer's expenditure for plant food is slightly more than 5½¢ out of each dollar of income. That's the average —it varies from about 2¢ in Texas to about 11¢ in South Carolina. In Mississippi it is about 6¢ which is above the national average.

"Let none of us believe that our opportunity for growth from the standpoint of getting the farmer to use more per acre has reached the point of saturation. To a man in this industry we should be saying to the farmer, 'Don't be hurt by false economy. Don't cut expenditures that lead to a reduction in net profit. Do use more fertilizer. It's the one real bargain you can buy and you are not making anywhere near the full use of it to get higher yields and more income.' "

Urging Mississippi to support the work of W. R. Thompson whom he termed "an outstanding pasture man," Mr. Price said, "Grassland gets less than 10% of our total fertilizer tonnage, yet it is capable of consuming 30 million tons. Mississippi open pastures alone need an annual application equal to the total now consumed by all crops."

NEW OFFICERS elected recently at Biloxi, Miss., by the Mississippi Soil Fertility and Plant Food Council are from left: Mike R. Blouin, Jr., of Columbus, president; W. F. Harris of Jackson, vice president, and W. L. Ashley of Jackson, secretary-treasurer.

John Zigler, vice president International Minerals & Chemical Corp., said, "The entire credit outlook of our industry needs overhauling." Rather than fertilizer dealers extending credit to farmers, he proposes that banks and government lending agencies do more of it.

"We know," he said, "that in many instances the reason we have to carry this (fertilizer) account is because our dealer or agent is carrying the farmer. The net result is that in many places we are doing business almost unwillingly. I feel sure that we all know of dealers who are thinking of getting out of the fertilizer business because of the lack of profits and the necessity of extending credit.

"This condition hurts everyone. We believe the entire credit outlook needs overhauling . . . ideally, the farmer should obtain his loan from a bank or from a government agency. First, because these organizations are set up to service the farmer. They can look at his total requirements for all phases of his farming program. They can compare these requirements with his total financial ability.

"The attitude of the banker is important. We say the banks should lend money to farmers for fertilizer, but listen to this: Two years ago the National Plant Food Institute conducted a survey among farmers on all phases of fertilization practices. One question asked the farmers was 'With whom did you discuss your fertilizer needs before your purchase?' Not one farmer in the southwestern states reported discussing his fertilizer needs with a banker. Here is a tremendous area for a council to work for improvement. We not only have to convince the farmer that he should deal with a traditional lending institution, we have to encourage the banks and government agencies to become 'fertilizer conscious!'

"There is a tendency on the dealer's part to sell the credit buyer what the dealer has on hand, and often the grade of which he has the most. There is also a tendency for dealers to hold down on the amount of fertilizer. The idea is to limit the financial commitment. The truth is, the best way to make sure the bill is paid is to increase the amount of fertilizer and shoot for top yields.

"The farmer who has made his financing arrangements at the bank, or through a government agency, can demand service. He is calling the tune, and can buy what he wants where he wants. At the same time, the dealer will be more anxious to give service, because this is cash business, not credit business. The dealer will be much more interested in soil testing, in selling enough of the right kind of fertilizer, in selling improved fertilizer. We no longer would have a situation where the dealer is almost afraid to sell. He would be anxious to sell. Couldn't a sales force do a much better merchandising job through this type of dealer, who is spending his time selling his wares—not worrying about collecting his money?

"Until we correct our credit situation, we will not see the progress which this industry should be making. If we continue to see our profits strangled by the burden of extended credit, then our industry will move ahead only slowly and painfully—keeping expenditures to a minimum and doing business at the same old stand in the same old way."

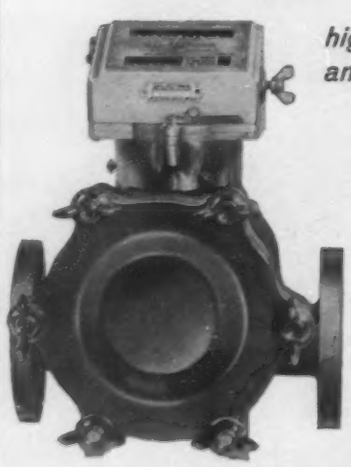
Concluding, Mr. Zigler said, "You would not be sitting in this room unless you were convinced as I am, that fertilizer is the farmer's best buy. He can make $3, $5 or even more, for every dollar he invests, but the key to progress is a group of farmers who have financial means and established credit, who can demand the services which they require. When dealers and manufacturers rush to give this service, then our industry is making the progress that the farmer is entitled to expect."

W. P. McMullan, Jr., vice president Deposit Guaranty Bank & Trust Co., Jackson, emphasized that the bankers' thinking in relation to the farmers needs is undergoing a change. He stressed the higher and more long term financing requirements of a modern farm business. "With the accelerated rate of mechanization on our farms, the intermediate farm credit has come into a place of importance," he explained.

"The concept of farm financing has changed from the traditional year to year crop loan to a matter of supplying the farmer with a complete, well planned, business-like credit and financial service," he said. "Of course the crop loan or operation loan is still important but we recognize that there are a number of needs to be met."

Mr. McMullan concluded, "Banks, as well as other lenders, have a great investment in agriculture. By being more aware of the problems of the farmer and of his financial need, and by having available capable, qualified men to make and service the loan, and to advise the farmer on finances

Badger's 2" stainless steel meter with magnetic drive...



high accuracy on chemical and fertilizer applications

- Ruggedly constructed of Type 316 stainless steel for measuring liquid fertilizer and corrosive chemical solutions.
- Key maintenance features: simple design, take apart construction for easy, quick cleaning. Magnetic drive eliminates packing gland.
- Accuracy ±.5% (20-100 GPM), operating pressure to 150 PSI, and temperatures to 150° F.
- Order with low-cost standard totalizer, combined gallon totalizer and reset totalizer or electric batch. Can be equipped with remote reading Read-o-Matic register as accessory.
- *Typical uses:* measuring, blending, batching of liquid corrosive chemicals and fertilizers in manufacturing and bulk plant operations.

Write for descriptive literature

Badger Meter Mfg. Co.

Industrial Products Division

4545 W. Brown Deer Rd. • Milwaukee 23, Wis.

and operations, lenders today are in a position, as never before, to help the farmer develop his potential to the maximum."

At the close of the annual convention, Mike R. Blouin, Jr., of Columbus, was elected president of the Mississippi Soil Fertility and Plant Food Council. He succeeds H. S. Gordon, Jr., of Jackson.

W. F. Harris of Jackson, was elected vice president. Reelected secretary-treasurer was W. L. Ashley, of Jackson.

The council voted to return to the Buena Vista Hotel in 1961 for its second convention, setting the date for Aug. 10-12.

Strong optimism for the future of Mississippi's agriculture was expressed by Owen Cooper, executive vice president, Mississippi Chemical Corp., Yazoo City. Mr. Cooper predicted, "We are going to have larger farms, more efficient farms, higher per capita income on our farms. This will permit better land utilization, more livestock and a tremendous upsurge in forestry and forest products."

Dr. C. Dale Hoover, head of the agronomy department, Mississippi State University, who moderated discussions by the university's agronomists, pointed out, "Agriculture is big business, especially in Mississippi which is an agricultural state. We take this for granted, but many people listen to other sources or are not fully aware of this fact."

Dr. D. W. Colvard, president of Mississippi State University, declared that "such land-grant universities have put science to work for farm and city people since 1862. The fertilizer industry has rendered a great service by taking research discoveries and creating more economical products.

"We are learning how to make our minds more powerful than our muscles. We are learning the importance of capital, science and management as parts of the agriculture of this day."

Dr. L. N. Wise of the Mississippi experiment station who has advised many other countries about seed technology, describing different systems of agriculture throughout the world, noted the importance of fertilizer and crop improvement in the heavily populated Far East. Dr. Wise said, "Japan is like a garden as far as its agriculture is concerned. It has to be in order for the people to survive. They use every trick of the trade to increase production just a little more."

Dr. R. R. Bruce, Mississippi Experiment Station agronomist, reported "Moisture is even more important than is generally realized in determining how well plants can use commercial fertilizer materials." Dr. Bruce sa'd, "Although the question 'how important is soil moisture in fertilization?' has been posed, it is not possible to satisfactorily answer it. Rather some important aspects of the relationship between soil moisture and the supply of nutrients to plants will be discussed. By this treatment it is our objective simply to present for your careful consideration a few concepts and principles basic to this relationship and a few applications of these principles." By use of slides he described work that has been done and is being done on this project.

Mr. Bruce summarized, ". . . It is of such importance that the response to a given fertilizer treatment must constantly be evaluated in terms of the existing soil moisture conditions."

How's Business?

Upward Trend Noted In Company Reports

V-C Net Sales Up For 1959-60 Fiscal Year

RICHMOND, VA. — Consolidated net sales of the Virginia-Carolina Chemical Corp. for fiscal year ended June 30, amounted to $86,822,359, reported Justin Potter, president.

Net earnings after income taxes, amounted to $2,105,719, which compares with earnings of $1,351,990 for the previous year. However, a substantial part of the improvement was due to an income tax saving resulting from the transfer of a large tract of phosphate land to the trustee for the company's retirement plan for employees, Mr. Potter said.

"For this reason," said Mr. Potter, "we feel stockholders should consider primarily the earnings from operations before income taxes when comparing results. These results are disappointing to the management because they actually represent a slight decline in earnings as a percentage of sales."

Federal Chemical Declares Dividend

LOUISVILLE, KY. — Federal Chemical Co. declared a dividend of $1.50 a share on its preferred stock, payable Oct. 1 to stockholders of record Sept. 15.

Federal Chemical Co. manufactures fertilizers and produces ground rock phosphate.

Record First Half Sales, Earnings Noted by Stepan

CHICAGO — Stepan Chemical Co. reported record first half sales and earnings.

Net profit of the Chicago-headquartered company and its subsidiaries was $751,299, or $1.12 a share, in the first six months of 1960, a jump of 59% compared with $472,566, or 70¢ a share, in the corresponding period of 1959. Stepan is a diversified producer of chemicals for such uses as detergents, toiletries, fertilizers, plastics and soft drinks.

Net sales in the first half totaled $12,534,042 compared with $8,693,658 in the same period a year ago, an increase of 44%.

Alfred C. Stepan, Jr., president, said in the quarterly report to stockholders that "despite the significant gains in sales and earnings, your management was not fully satisfied with the results."

He said floods in certain sections of the country which held down fertilizer sales in addition to a general decline in economic conditions combined to reduce sales and earnings below levels hoped for at the start of the year.

Second quarter results also ran sharply ahead of year-ago figures.

Commercial Solvents Earnings Up 80%

NEW YORK — Earnings were up for Commercial Solvents Corp. during the first six months of 1960, the firm reports. Earnings for the first half of 1960 were $2,618,178, or 93¢ a share as compared with $1,367,312, or 49¢ a share in the same period of 1959.

Sales for the first half of this year totaled $34,385,512, as compared to $32,474,357 in 1959. According to Maynard C. Wheeler, president, the 80% rise in earnings is due to the company's continuing emphasis and expansion of the profitable areas of its business and favorable results from the company-wide profit improvement program and the maintenance of operations at efficient capacities.

Dow Annual Sales, Earnings Reach New Records

MIDLAND, MICH. — The Dow Chemical Co. reported sales of $781,433,740 and net earnings after taxes of $82,404,342, or $3.01 per share for the fiscal year ended May 31. This represented a new high in sales, net and earnings per share.

The sales increase was 11% over the preceding year, the net up 31% and earnings per share up 26% on the 27,362,631 shares outstanding. Shares outstanding increased by 4% from 26,357,090 in 1959.

Beckman Instruments Reports Earning Increase

FULLERTON, CAL.—A. O. Beckman, president of Beckman Instruments, Inc., reports that the company's sales for the fiscal year ended June 30, 1960, amounted to $54,257,282, or 21% higher than the sales of the preceding year.

After-tax earnings were $3,092,915 or an increase of 75% over fiscal 1959, Mr. Beckman said. Earnings per share were $2.24 as compared with $1.30 for the previous year.

Wisconsin Scientists Report Research On Coated Fertilizer

MADISON, WIS.—Research at the University of Wisconsin suggests that farmers may be using plastic-coated fertilizer capsules on some crops in the future. This may be a way to spread fertilizer effects over a longer time, they say, supplying nutrients as they are needed throughout the season, rather than a surplus of nutrients soon after fertilizing and a shortage later in the season.

In the April 4 issue, Croplife reported on preliminary research work undertaken by Archer-Daniels-Midland Co. of Minneapolis concerning compounds that wrap fertilizer granules in a film. According to Dr. Vern Bidlack, ADM researcher, the company is continuing to do research on the project and that Michigan State University is also engaged in studies of a similar nature.

Actually, the first crop on a field uses only 10% to 20% of the phosphorus and 40% to 70% of the nitrogen and potassium put on as fertilizer, the Wisconsin researchers say. That part of the fertilizer which isn't used is only partly available to succeeding crops. Much of the nitrogen is leached away, and some is used by soil bacteria. Potassium also is soluble in rainwater and is thus removed in the drainage from the soil. Phosphorus combines with other minerals in the soil to form insoluble compounds that make the phosphorus unavailable to plants. Soil scientists have long tried to find natural fertilizing materials which release their nutrients slowly.

In recent tests, W. C. Dahnke, O. J. Attoe and L. E. Engelbert tried wax coatings and polyethylene plastic coatings to slow down the release of plant nutrients from the fertilizer.

They put ¼ to ½ teaspoon of complete fertilizer on a 2-in. square piece of plastic film, wrapped the film over and sealed it with heat. Then they made a few pinholes in the film so water could get in to dissolve the fertilizer particles. These plastic covered packages were used to fertilize small areas of bluegrass.

They prepared wax-coated fertilizer by mixing ammonium sulfate crystals with melted wax or paraffin, then pressing the mixture into pills about ⅝ in. in diameter and ⅝ in. long. These pellets were used to fertilize soil in cans which were then planted to corn.

Neither procedure gave increased yields over regular fertilizer of a similar make-up. However, the wax coating did result in better recovery of applied nitrogen by the crop. The corn took up 65% of the regular fertilizer applied, compared to 81% for fertilizer pelleted with 20% microcrystalline wax.

Most important, the researchers say, is that the plastic-coated fertilizer gave a much more uniform growth of grass throughout the season.

The phosphate probably wasn't released as rapidly as it should have been for best growth. The research men think they can overcome this difficulty by using the proper carriers for the plant nutrients in the fertilizer.

Accurate Lime and Fertilizer Spreads From 100 lbs. Per Acre and Up!

NEW LEADER L-32S SPREADER

- 12.5 H.P. Engine drives Twin Spinners for even spreads!
- 24" Conveyor driven by PTO or drive shaft drive for precise per-acre requirements!
- Available with full line of optional attachments!

DEMAND FOR CUSTOM SPREADING IS GROWING

More and more farmers want the convenience of a bulk spreading service. It saves them time, equipment and maintenance expense *plus*, up to $4–$8 per acre over bagged goods. Let us help you get started in business with "New Leader".

MAIL TODAY

HIGHWAY EQUIPMENT COMPANY

6251 D Ave. N. W. Cedar Rapids, Iowa

NAME.....

ADDRESS.....

TOWN.....STATE.....

☐ Farmer ☐ Operator ☐ Student

Mail coupon for L-32S literature and a copy of "Your Land Is Different" a booklet designed to help you sell more bulk fertilizer.

PHYTOPATHS

(Continued from page 1)

cals to control sting nematodes can increase peanut yields by three to four times. Equally important, they said, these chemicals do a good job whether they're applied before planting, at planting time, or six weeks after peanuts are planted.

The scientists made these discoveries in extensive studies conducted during the past year, they reported.

Good results were obtained with broadcast treatments of an experimental non-volatile nematocide, "EN 18133," and with soil injections of the volatile chemical, 1,2-dibromo-3-chloropropane.

A new disease threat to the apple orchards of the Midwest was revealed by two University of Illinois plant pathologists.

Unknown in orchards until only two years ago, the apple disease—alternaria rot—now has been infecting apples growing in Missouri, Illinois, and Indiana. Infection ran as high as one apple in three, it was reported.

Bill G. Tweedy and Dwight Powell of the University of Illinois' Department of Plant Pathology found the disease infecting only Jonathan variety apples, each fruit developing two to three black spots a quarter of an inch in diameter and an eighth of an inch deep. Their research showed that Golden Delicious variety also could be infected, and that Winesap and Rome Beauty varieties were resistant.

In orchards, infection occurred only on fruit that had tiny breaks in their rind—breaks caused primarily by insect punctures. The fungus is destructive only when able to attack beneath the skin of apples.

The plant pathologists learned this year that fungicides normally used by growers to control orchard diseases are not effective against alternaria rot. Since the fungus which causes the rot apparently abounds in orchards, they consider the disease to represent a distinct threat to many apple growers until an adequate control can be discovered.

A measure of the reproductive potential of the nematode was pointed up by the research of a Rutgers University scientist.

Herbert T. Streu inoculated rooted carnation cuttings with 250 ring nematodes, and planted the cuttings in pots containing sterile soil. In just six months the nematode population was 33,000—a 1,320-fold increase, he reported. In addition, he pointed out that nematode gains were made at the expense of carnation roots. Infested roots weighed a third less than normal; were smaller in diameter, more branched, and more brittle.

The ring nematodes fed not only on carnation root surfaces, but also penetrated into root tissue causing cell collapse, he said.

The bacterium that causes canker and blast of stone fruit trees apparently is omnipresent, according to a team of University of California plant pathologists at the meeting. Thus the long unanswered question of growers and scientists alike, "Where does it come from?", is finally resolved.

Reporting their findings, Harley English and James R. Davis said they found the disease-causing bacteria on the twigs and leaves of trees in both healthy and diseased orchards. Moreover, they were able to infect stone fruit seedlings with canker and blast with bacteria obtained in washings from the foliage of nearly 50 species of fruit trees, vines, and ornamental trees and shrubs common to California orchard areas.

Few of the bacteria were recovered from the air of infected orchards; none from the soil. Dr. English and Mr. Davis noted that bacterial populations on twigs and leaves of stone fruits fluctuated with weather conditions; low humidity-high temperature conditions reduced populations of the organism to low levels.

A new virus disease of many legume crops has been identified by two Washington State University plant pathologists, C. B. Skotland and D. W. Burke, who told the assembly that the virus attacks at least some varieties of several legumes, including dry beans, green beans, lima beans, tepary beans, cowpeas, and chickpeas.

The pathologists got the first line on this new disease in 1957, when typically virus disease symptoms resembling those caused by bean virus 1 occurred in a field planted to Columbia Pinto, a new dry bean resistant to bean viruses 1 and 1A. When seed from the infected field was planted, new bean plants also showed virus symptoms, indicating that the disease was seed-borne. The virus also is spread from diseased to healthy plants by aphids.

Further tests showed the virus to be unrelated to bean viruses 1 and 2.

Infection tests by Dr. Skotland and Dr. Burke also have shown several legume varieties to be immune to the new virus. These include varieties of green beans, cowpeas, peas, soybeans, alfalfa, sweet clover, crimson clover, red clover, ladino clover, velvet beans, and broadbeans.

The research of two Canadian scientists suggests that a fungus and a nematode may be teaming up to pull down the profits of the commercial eggplant growers of southern Ontario.

C. D. McKeen and W. D. Mountain of the Canada Department of Agriculture said they have preliminary evidence that the presence of root lesion nematodes in the soil leads to greater than normal eggplant losses due to wilt, a disease caused by a soil-borne fungus.

Although additional research is needed to determine exactly how these two organisms team up for trouble, the Canadians said that up to a point, the fungus and the nematode may thrive by competing for a single food source—the roots of eggplants. Under the influence of fungus-infected roots, nematodes seem to build larger than normal populations. And the root penetration of these pests may, in turn, spread the growth of the disease-causing fungus.

A less complex possibility is that the root-feeding of nematodes may increase the incidence of wilt by simply providing the fungus with avenues of entrance into the roots, or may break down root cell structure, making it easier for the fungus to infect.

Alfalfa growers in the Middle Atlantic States are probably losing a big part of their production to root lesion nematodes, according to a University of Rhode Island plant pathologist. This root-feeding pest is widespread throughout the soil of the area.

Reporting on experiments with soil fumigation, G. J. Stessel noted a significant relationship between the reduction in nematode populations in the soil and the increase in alfalfa yields.

Alfalfa grown on treated soil yielded 17% more than alfalfa grown on a similar, but untreated field. With soil fumigants of lesser effectiveness, alfalfa yields increased less.

Dr. Stessel's trials also proved that there was no relationship between the yield-reducing activity of root lesion nematodes, and the prevalence of crown rot disease. The disease was as severe on alfalfa grown on treated, as on untreated soils.

An organic chemical used by farmers and home gardeners to combat plant diseases has now been shown to speed plant growth also, according to research by a University of Maine scientist team which had observed an extra dividend in higher yields when a fungicide was used to control plant diseases on apples and strawberries.

Results of studies by G. R. Cooper, A. S. Allen, M. T. Hilborn, and R. C. McCrum, using duckweed as the test crop, showed that adding the fungicide to the nutrient growing solution at the rate of 2.5 parts per million increased dry weight plant yield by more than 60%. At a concentration of 20 ppm, the product increased the multiplication of duckweed plants or "fronds" by more than 40%.

Treating cotton and sugar beet seeds with a combination of fungicidal chemicals appears to be the best answer yet to damping off, a disease that can wipe out seedling stands of these crops, reported a team of California plant pathologists.

Compared with the single-chemical seed treatment cotton growers now rely on, the combination treatment reduced damping off losses by more than a third. Results with sugar beets were even better—so good in fact that several sugar beet companies will use a combination treatment on a fairly large test basis next year, they said. Wide use of combinations on cotton awaits the development of precise formulations that control damping off without danger of chemical damage to seedlings.

Value of combination seed treatments was proved by a state-federal team of plant pathologists located at the University of California.

The research team—L. D. Leach and W. J. Tolmsoff of the University and R. H. Garber of the U.S. Department of Agriculture—figured that since more than one fungus caused damping off, a combination of fungicides selected for their effectiveness against each organism would give the best control. Their results bear this out.

BUGS TURN ON ENTOMOLOGIST

BATON ROUGE, LA.—When Dr. J. S. Roussel, professor of LSU entomology department and an expert on insects, returned home after a few weeks absence, he found his lawn of St. Augustine grass destroyed by chinch bugs.

Dr. Roussel, using his own lawn as an illustration of the speed with which chinch bugs can destroy a lawn, said the insects have an apparent appetite only for St. Augustine grass. The best remedy, he noted, is simply to replace the lawn with another type of grass after chinch bugs have finished with it.

25% Production Increase Seen by Potash Official

LOS ANGELES—American Potash & Chemical Corp.'s production of potash will be increased over 25% when previously announced expansions at the firm's Trona plant are completed in mid-1961, it has been announced by Wm. J. F. Francis, vice president, marketing.

New granulation facilities are being installed in conjunction with the increased primary potash production which will boost output of new improved granular muriate of potash for agricultural purposes, he said.

The $11,000,000 program, which will affect all of the plant's primary products, includes construction of a large fourth evaporator unit and other process changes.

Minnesota Dealers Meet, Discuss Merchandising Ideas

MORRIS, MINN.—Nearly 50 fertilizer dealers, industry personnel and educators met Sept. 7, at this rural Minnesota community to take part in a "Fertilizer Dealer Day," sponsored by the University of Minnesota and the Minnesota Fertilizer Industry Assn.

The meeting was the first in a two-day program, with another gathering taking place the following day at Waseca, Minn.

The West Central Experiment Station and the Southern Experiment Station, respectively, acted as hosts to the meetings, and highlights included tours of fertilizer research plots and merchandising discussions.

Leading off the discussion part of the meeting was Dr. Robert D. Munson, American Potash Institute. Dr. Munson issued a challenge to fertilizer dealers to "use imagination in planning their merchandising and management programs."

Enumerating what farmers expect from their fertilizer dealers, Dr. Munson felt that the dealer must be a reliable source of information about fertilizer use, and that the dealer must offer extra services.

Listed under Dr. Munson's term "services" were: soil sample and testing programs; follow up to check on fertilizer results; sponsorship of fertilizer demonstration plots, and sponsorship of fertilizer clinics, having an expert on hand to answer questions.

R. E. Bergman, State of Minnesota Department of Agriculture, reviewed regulations that must be followed by fertilizer dealers, including insuring guarantees, having correct labels and invoices and giving proper instructions on pesticide-fertilizer mixture labels.

Dr. Curtis J. Overdahl, University of Minnesota soils specialist, reported on results of current experiments being carried out at the Morris experiment station.

Lowell Hanson, University of Minnesota soils specialist, reviewed progress of the coming Minnesota Fall Soil Sample Roundup Program.

Rounding out the discussion period was Donald E. Swanson, assistant advertising manager, marketing division, International Minerals & Chemical Corp., Skokie, Ill. Mr. Swanson discussed "Selling the Farmer." Interspersed with slides, Mr. Swanson's talk was centered around the need for dealers to have a planned sales program.

He said that it was important that the dealer, in obtaining such a program, be aware of buying motives based both on feeling and reason. He also stressed the need for dealers to be aware of farmers' attitudes toward fertilizer.

Mr. Swanson listed a number of ways dealers could get more business from present customers. Included in the list were:

- Soil testing.
- Farm demonstrations.
- Success stories.
- Recommendations from authorities.
- Credit assistance.
- Record keeping assistance.
- Economic benefits.
- Proper follow-up.

CHANGES NAME

LAWRENCE, KANSAS—Dean R. McHard, president of Kaw Fertilizer Service, Inc., of Lawrence, Kansas, announces that the company name has been changed to Agricultural Business Co., Inc. The new trade mark will be "Agri-Bizz" symbolizing a link between farm and industry. The firm began five years ago as a retail fertilizer business and expansion of geographic scope to include over 80 dealers in seven states, has created the need for the new name.

Monsanto Forms New Agricultural Chemical Division, Names Key Personnel for Staff

ST. LOUIS — Monsanto Chemical Co. has announced the creation of an Agricultural Chemicals division to "improve and strengthen" its service to agriculture.

Tom K. Smith, Jr., of St. Louis has been elected a vice president of Monsanto and appointed general manager of the new operating division. His managerial staff, all of St. Louis, includes J. Paul Ekberg, director of marketing; Dr. Richard S. Gordon, director of research; Stanley B. Johnson, director of engineering; Robert R. Rumer, director of manufacturing; James H. Senger, director of development, and Fred T. Mitchell, director of administrative services.

Mr. Smith said the formation of the new division brings about a consolidation and strengthening of research, development, manufacturing and marketing efforts in agricultural chemicals formerly shared between two Monsanto divisions.

He pointed out that agriculture was Monsanto's second-largest industry customer in dollar volume last year, accounting for more than 11% of the company's total sales to consuming industries.

"Chemicals are indispensable tools of today's agriculture. They will become increasingly important as an expanding population demands quality food in abundance and at a low price from the dwindling farm labor force," Mr. Smith said.

Products made and marketed by the new division will include fertilizers, plant and soil fungicides, insecticides, herbicides and animal feed additives. Monsanto is the world's largest manufacturer of elemental phosphorus and one of the major producers of nitrogen products.

Headquarters and research laboratories for the new division will be located at St. Louis. Its production facilities will include plants at El Dorado, Ark., and Luling, La., with additional manufacturing units at the company's Anniston, Ala.; Nitro, W. Va., and Monsanto, Ill., locations.

One Root Provides Nutrients for Plant Growth, Tests Show

STILLWATER, OKLA.—A Purdue University agronomist, Dr. A. J. Ohlrogge, has described his experiments showing that a single corn root could furnish all the nitrogen and phosphate needed for normal plant growth.

Dr. Ohlrogge's scientific paper, presented before the American Society for Horticultural Science meeting in connection with the American Institute of Biological Sciences at Oklahoma State University, explained the effectiveness of placing starter fertilizer in narrow bands in the soil for corn.

In Dr. Ohlrogge's experiment, corn was started in the greenhouse, then transplanted to specially prepared holes in the field. The holes were lined with a double thickness of heavy plastic film. A three-gallon can was placed inside each hole and both the can and the hole around the can were filled with vermiculite.

The corn plants were placed in the vermiculite outside the can, and one root from each plant was led into the can through a hole in the side. Then nitrogen and phosphate were added to the vermiculite in the can, but none was supplied to the other roots outside the can.

The corn grew vigorously, tasselled and produced ears yielding about one-half pound of grain each.

This proved to Dr. Ohlrogge that one corn root can handle the nitrogen and phosphate requirements of the plant if the supply of nutrients at the end of the root is sufficient and if the absorbing system is adequate.

Roots will not seek out the fertilizer band, said Dr. Ohlrogge, and only the very few roots which actually come in contact with the band are able to take up nutrients from it.

Dr. Ohlrogge said that the fertilizer band should be placed where it will intercept the growing root, but not so close that mineral salts would damage the germinating seed. His experience showed that the band should be placed one to three inches below and to the side of the seed.

Michigan Eyes Growing St. Lawrence Seaway Pest Control Problem

LANSING, MICH.—A growing plant and pest problem that came along with the opening of the St. Lawrence seaway has been under study by a special committee of the Michigan State Senate. Representatives of state and federal agricultural pest control agencies are seriously mulling the problems they are encountering as more and more foreign ships stop at inland Michigan ports bringing with them the threat of plant and animal diseases.

The state senate committee, headed by Sen. Arthur Dehmel (R., Unionville) will report its findings to the 1961 Michigan legislature.

G. S. McIntyre, director of the Michigan Department of Agriculture, pointed out that one pest, the khapra beetle, "the world's worst pest of stored grain," had been found on five foreign ships entering the U.S. through the St. Lawrence seaway in 1959.

"There are many other insects such as the European cherry fruit fly which, through improper disposal of garbage could infect the cherry orchards of Michigan; or the celery fly which attacks celery and parsnips and is known to be present throughout Europe; the soybean pod borer; the asparagus fly; pine moth, and many other insects can enter this country through the Great Lakes ports," Mr. McIntyre said.

Mr. McIntyre said that the U.S. Department of Agriculture whose job it is to inspect foreign vessels and their cargoes, does not have the necessary personnel to do the complete job.

He called for the development of a Michigan program, in addition to the federal program, to insure complete inspection of foreign ships entering Great Lakes ports.

J. Guy Lewis, assistant regional supervisor of the plant quarantine division of the USDA, has explained difficulties his department has had in the inspection of ships entering seaway ports.

Mr. Lewis said he has 18 men and four supervisory personnel whose job it is to inspect all ships for possible plant and animal diseases. Working with a budget of approximately $225,000, Mr. Lewis said, his crew spent 1½ to 4 hours inspecting each of 597 ships traveling through the St. Lawrence seaway.

Mr. Lewis listed 28 alien pests that could do millions of dollars in damage to Michigan crops without proper control of shipping. Last year, he said, five foreign ships were quarantined and fumigated at a cost of more than $2,000 to their owners.

Eugene Regan, director of plant quarantine division of agricultural research service of the USDA, has asked for more pest elimination in foreign ports by ship owners.

The chief of the plant industry division of the state department of agriculture, C. A. Boyer, contends there is a need for at least "six or seven" more men to the 40 already assigned to him for pest control at the state level.

Leonard Awarded Cyanamid Contract

CHICAGO — Leonard Construction Co. of Chicago has announced receiving the contract award for engineering and construction of a contact sulfuric acid plant at Brewster, Fla., for American Cyanamid Co. (Page 2, Croplife, Aug. 29.)

The plant will use elemental sulfur as raw material. Construction will begin immediately, Leonard said, with completion scheduled for mid-1961.

ELECTED TO HONOR SOCIETY

NEW YORK — Dr. C. Loyal W. Swanson, chief agronomist for Texaco, Inc., was recently elected to membership in the University of Illinois chapter of Gamma Sigma Delta, honor society of agriculture. Eligibility for membership is based largely on scholarship and "by virtue of a signal service to agricultural development." Dr. Swanson is a graduate of Iowa State University with a major in soils. He has offices in Chicago and is responsible for research and development activities as related to fertilizers for Texaco.

MERGER

(Continued from page 1)

acid, sulphuric acid, ammonia and nitrogen solutions.

After completion of the merger, Federal will be operated under its present name by its present management, officers and staff as a division of National Distillers and Chemical Corp. Headquarters will continue at Louisville.

Federal's plants are located in Louisville; Humboldt and Nashville, Tenn.; Danville, Ill.; Butler, Indiana; and Columbus, Ohio.

ALABAMA

(Continued from page 1)

screwworm eradication area—Mississippi, Georgia, South Carolina, and Florida—were alerted to the Alabama discovery and will urge stockmen to intensify their efforts to detect screwworms.

Screwworms were found in a shoulder wound on the infested steer in Geneva County by Dr. Robert B. Boone, a local practitioner. Veterinary practitioners throughout the South have cooperated closely with state and federal officials during the screwworm eradication campaign.

Livestock inspectors stationed along the inspection line, which roughly follows the Mississippi River, have prevented nearly 2 dozen screwworm infestations from entering the Southeast during the past 2 years. Only two other infestations have been found this year east of the Mississippi River. These occurred in two counties along the river in Mississippi within the past month. Similar infestations occurring in Mississippi during the past 2 years have been eradicated.

Louisiana and Arkansas, located west of the eradication area, have each reported 7 screwworm infestations this year. Quick reporting of cases by growers has aided state and federal authorities in charting the movement of the pest and has provided early warnings to other growers to take precautions against screwworm damage.

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

3-WAYS BETTER:

this MFG
DRY FERTILIZER HOPPER

1. Corrosion resistant to chemicals, rust and weather
2. Durable to withstand impact and abrasion of dry mixes
3. Translucent—to reveal level of contents at a glance

Planter makers use MFG hoppers for a variety of other advantages, too: light in weight; lifetime service means no replacing; seamless one-piece molded unit for greater strength; no deterioration of any kind.

Special sizes and shapes can be custom molded for your specific application needs. Write for details.

MOLDED FIBER GLASS BODY COMPANY
4643 Benefit Avenue, Ashtabula, Ohio

Croplife®
A BUSINESS PAPER FOR THE FARM CHEMICAL INDUSTRY

Chemicals Credited for Big Australian Crop Yield

PRODUCTION of principal crops in Australia has increased "spectacularly" during the past quarter-century, according to a recent report from the Australian Institute of Agricultural Science.

As is the case in the U.S., much of the credit for this greater yield is laid to the increased use of fertilizers and pesticides, the report says. Other factors involved are improved practices of crop rotation, which, coupled with broader use of plant food, have improved the chemical and physical fertility of the soil.

Of significance is Australia's stepping up of pasture land acreages through greater attention to fertility. An estimated increase of 30 million acres of sown top-dressed pastures has improved the sheep-carrying capacity of the country by the equivalent of 33 million sheep. "Since the country's total livestock population has actually increased by the equivalent of 60 million sheep, sown pastures have contributed 55% of the increase," the report states.

Not only in pastures have increases been wrought. Wheat yields have jumped from 12 bu. an acre in the 1931-35 period, to 17 bu. in the 1955-59 five years. Barley rose from 18 to 23 bu. an acre; potatoes from 2½ to 4½ tons an acre; sugarcane from 2.6 to 3.2 tons and apples from 95 bu. to more than 150.

According to Prof. C. M. Donald of the University of Adelaide, the pasture improvement program has made possible about 40 million acres of land in which the fertility level is rising steadily. He adds that the excellent yields herald the advent of a "new era" in which pasture lands are moving towards "mixed farming," as he calls it.

In marked contrast to agricultural trends in the U.S., Prof. Donald predicts that farming in Australia will see a greater range of crops, both for cash and for feeding, and "inevitably there will be movement towards smaller properties and more diverse and more secure agriculture."

All over the world, agriculturists are becoming more and more aware of the tremendous economic impact carried by the wise use of both fertilizers and pesticides. Agriculture has gone farther in the U.S. than probably in any other country. Yet, upon seeing the wide differences between amounts of fertilizers actually used and the tonnages recommended by various state experiment stations and colleges as being of optimum economic value, it is easy to see there is still a big undeveloped market right here at home.

Dutch Elm Disease Fund Used to Remove Trees

AN IRONICAL TWIST in the course of events is seen in the Dutch elm disease situation in a northern Illinois city where the epidemic is really getting under way and trees are dying by the thousands.

Two years ago, the people of this city turned down an elm disease levy of $5 per $1,000 assessed valuation by a 2 to 1 vote in a referendum. The money thus raised would have provided spray protection against the disease and would have probably saved the 6,000 elms now dying in the city. But no, two-thirds of the voters considered spraying as dangerous or ineffective.

Now, about the same amount of city funds is being sought, not to do a preventive spraying job, but to remove and dispose of the thousands of dead trees marring the city's landscape. In other words, for the money that might have saved the city's elms two years ago, its citizens are now promised only the removal of unsightly and dangerous dead trees.

One of the objections sounded when funds were being sought for a preventive spray job was that such a program might reduce the bird population. However, observations made by an elm disease expert from the State University indicated that the lack of a tree-saving program had cost the city many of its birds. "I saw only one robin in this city, where they do no spraying," he said. "And I was looking for them. So you can take your choice . . . one robin and dead trees, or spray and keep your trees."

The forester in the affected city said that he is fighting a losing battle just to keep up with removal of dead trees with his force of ten men. He reported that the 6,000 trees dying this year are 4,000 more than last year's loss and 4,500 more than the year before.

Since there are many cities throughout the land threatened by both Dutch elm disease and the "bird lover" faction who raise a big fuss whenever any spray program is proposed, the pesticide industry can do itself a favor by telling the story of the town which refused to spend money for the doctor, only to shell out a greater amount for "tree undertakers" after the disease had taken its toll of thousands of beautiful trees.

And it might even help to remind the bird lovers that, without trees, our feathered friends become homeless, wretched creatures who must seek other more favorable areas in which to frolic.

There are some good markets for insecticide products in many cities where Dutch elm disease threatens. Only sometimes a little hard sell is required before many gallons of spray material are actually purchased.

Weed Seeds Persistent

PATIENCE is sometimes called a virtue, but when it comes to the tenacity of weed seeds in maintaining viability over long periods of time, the word might be changed to "obstinacy," which is not always so virtuous. Particularly in the case of unwanted weeds which have been agriculture's foe for uncounted centuries.

The fact that some of the weed seeds, buried 80 years ago on the campus of Michigan State University, were still able to produce seedlings after all those years, was reported by two scientists at a recent meeting of the plant physiologists at Oklahoma State University. Drs. G. P. Steinbauer and H. T. Darlington, of the department of botany and plant pathology at Michigan State, reported that one weed, moth mullein, showed over 70% viability after its 80-year interment. This means, according to the scientists, that since there has been practically no reduction in viability during the past 30 years, the life expectancy curve of the moth mullein seeds indicates that they will very likely be alive, though buried, for over a century!

From this it would appear that herbicide sellers can advise their customers that there is no use to wait for weeds to die out of their own accord. Might as well make use of chemical weed killers and make sure that seeds, too, are destroyed.

The history of the experiments involving the weed seeds is an interesting story in itself. Dr. W. J. Beal, botany professor at Michigan State University in the late 1800's, set up the experiment in 1879. In his many contacts with farmers, Dr. Beal was told of the "strange and unexpected" appearance of certain weeds in cultivated fields.

He then mixed 20 species of weeds with moist sand, placed them in open, narrow-mouthed bottles, then buried them 18 inches below the soil surface. Periodically, one of the bottles has been dug up, the contents placed on sterile soil in the greenhouse and the resultant seedlings counted.

Croplife's Home Office

Croplife®
MARKETING EDITION

BPA — Member of Business Publications Audit

NBP — Member of National Business Publications

Lawrence A. Long, Editor
Donald Neth, Managing Editor

EDITORIAL STAFF — John Cipperly, Washington Correspondent; James L. Engfer, Editorial Assistant.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Jerome C. Whiting, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager; James S. Barden, Marketing and Research Director.

BUSINESS STAFF—Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald Neth, Secretary; Harry M. Dunn, Jr., Circulation Fulfillment Manager; James G. Pattridge, Assistant Treasurer; Richard Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

ADVERTISING REPRESENTATIVES

EASTERN STATES—Paul L. Dittemore, Manager; Archy S. Booker, Jr., and James W. Miller, Advertising Sales Representatives; Room 1101, 52 Vanderbilt Ave., New York 17, N.Y. (Tel Oregon 9-2490).

CENTRAL STATES—Don E. Rogers, Manager; Amos W. Standish and Robert M. Harrison, Advertising Sales Representatives; 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515).

SOUTHWEST—Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager; 612 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 2-1350).

NORTHWEST — Paul A. Anderson and Wayne H. Soule, Advertising Sales Representatives, P.O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

WESTERN STATES — The Maurice A. Kimball Co., Inc., 2550 Beverly Blvd., Los Angeles 57, Cal. (Tel. Dunkirk 8-6178); The Maurice A. Kimball Co., Inc., 681 Market St., San Francisco 5, Cal. (Tel. Exbrook 2-3365).

EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Franklin 4-5200. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 40, Minn.)

Associated Publications—The Northwestern Miller, Farm Store Merchandising, Feedstuffs, Feedlot, Professional Nursing Home

Sept. 21-22—Pennsylvania State Turf Field Day, University Park, Pa.

Oct. 10-11—Annual Four State Aerial Applicators Conference, Yakima, Wash.

Oct. 10-12—Association Official Agricultural Chemists, Shoreham Hotel, Washington, D.C.

Oct. 19—Executive Committee, National Safety Council, Fertilizer Section, National Safety Congress, Chicago.

Oct. 30-Nov. 3—National Association of County Agricultural Agents annual meeting, Hotel Deauville, Miami Beach, Fla.

Nov. 4-17—Seed and fertilizer clinics, University of Illinois, Nov. 4, Vandalia; Nov. 15, Macomb; Nov. 16, Dixon and Nov. 17, Urbana.

Nov. 22—Tenth Semi-Annual Meeting, Manufacturing Chemists' Assn, Statler Hilton Hotel, New York City.

Nov. 29—Annual Oklahoma Fertilizer Dealers' Conference, Huckins Hotel, Oklahoma City, Okla.

Meeting Memos listed above are being listed in this department this week for the first time.

Sept. 24-26—Western Agricultural Chemicals Assn., 31st annual meeting, Palm Springs Riviera Hotel, Palm Springs, Cal.

Sept. 27-29—Annual meeting of National Agricultural Chemicals Assn. for 1960, Hotel del Coronado, Coronado, Cal.

Sept. 29-30—Iowa Seed Dealers Assn., Savery Hotel, Des Moines, Iowa.

Sept. 29-30—Northeast Fertilizer Conference, Hotel Hershey, Hershey, Pa.

Oct. 5-6—Southeast Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Oct. 10-11—2nd annual Four State Aerial Applicators Conference, Yakima, Wash., Norkem Corp. sponsoring.

Oct. 14—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C. B. D. Cloaninger, Box 392, Clemson, S.C., secretary.

Oct. 17-21—48th annual National Safety Congress, Fertilizer Section. LaSalle Hotel, Chicago.

Oct. 31-Nov. 3—International Crop Improvement Assn. meeting, Denver, Colo.

Nov. 2-4—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C.

Nov. 3-4—Annual fall convention, Pacific Northwest Plant Food Assn., Boise, Idaho.

Nov. 9-11—National Fertilizer Solutions Assn, 1960 convention, Peabody Hotel, Memphis, Tenn.

Nov. 13-15—California Fertilizer Assn., 37th annual meeting, del Coronado Hotel, Coronado, Cal.

Nov. 28-Dec. 1—Eighth Annual Meeting, Entomological Society of America, Haddon Hotel, Atlantic City, N.J.

Nov. 29—Oklahoma Fertilizer Dealers Conference, Oklahoma Plant Food Educational Society and Oklahoma State University cooperators, Huckins Hotel, Oklahoma City, Okla.

Dec. 14—Louisiana Fertilizer Conference, Louisiana Plant Food Educational Society and Louisiana State University cooperators, Baton Rouge, La.

1961

Jan. 9-10—Texas Plant Food Conference, Texas Plant Food Educational Society and Texas A&M cooperators, College Station, Texas.

Jan. 11-13—Agricultural Ammonia Institute, 10th annual convention, Memphis, Tenn.

Jan. 17-18—Arkansas Plant Food Conference, Arkansas Plant Food Educational Society and University of Arkansas cooperators, Little Rock, Ark.

Feb. 1-2—Soil Science Society of North Carolina Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

BRUSH AND WEED KILLERS

KILL BITTERWEEDS, wild onions and dog fennel with R-H WEED RHAP. Low cost. Will not injure grass, grains; not poisonous. For free information write Reasor-Hill Corporation, Box 36CL, Jacksonville, Arkansas.

KILL BRUSH at low cost with amazing R-H BRUSH RHAP. Will not injure grasses, grains; not poisonous. For free information write Reasor-Hill Corporation, Box 36CL, Jacksonville, Arkansas.

KILL SUBMERSED WATER WEEDS which foul up motor propellers, tangle fishing gear, with R-H WEED RHAP, Granular 2,4-D. Inexpensive, easy to use, sure results. For free information write Reasor-Hill Corporation, Box 36CL, Jacksonville, Arkansas.

AMMO-NITE®
BAY-SOL®
ESCAMBIA CHEMICAL CORP.
EXCLUSIVE SALES AGENTS
ASHCRAFT-WILKINSON CO.

CALENDAR FOR 1960-61

SEPTEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JANUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

MAY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 20c per word; minimum charge $3.00. Situations wanted, 15c a word; $2.25 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 25c per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $12 per column inch.

All Want Ads cash with order.

HELP WANTED

SALES MANAGER, FOR MEDIUM SIZED agricultural business interested in growth. Fertilizer and pesticide experience necessary. Will be responsible for sales management, advertising, promotion and customer service. Please apply by submitting written application to Reading Bone Fertilizer Co., Box 232, Reading, Pa.

CHIEF CHEMIST TO SUPERVISE LABORatory and maintain liaison with plant operations. Excellent opportunity for personable, high ranking chemist with minimum five years' experience in fertilizer, sulphuric acid, and phosphoric acid production. Located in Gulf Coast area. Salary open. Send resume to: Ad No. 6181, Croplife, Minneapolis 40, Minn.

MISCELLANEOUS

FOR SALE—LARGE SULFUROUS MINERal deposit. Low pH. Valuable in treating alkaline and alkali conditions. Improves soil structure and water penetration. Carries wide variety water soluble trace minerals. Ideal as agricultural mineral or used in fertilizer base. Tested, proven, licensed in California and Arizona. Part cash, balance terms. Address Ad No. 6254, Croplife, Minneapolis 40, Minn.

MACHINERY FOR SALE

TECHNICAL DIRECTOR NEEDED

Southern firm in oilseed processing, agricultural chemicals and fertilizers needs well-educated, experienced technical director. Engineering degree desirable. Salary commensurate with ability. Small town near city. Write, giving educational background, experience, age, family status and picture.

Write Box 6220, Croplife, Minneapolis 40, Minn.

Croplife *Want Ads... Get Results*

ASSISTANT PLANT ENGINEER

Leading multi-plant, producer of fertilizers, needs Assistant Plant Engineer for integrated sulfuric, phosphoric and fertilizer plant in Gulf Coast area. Requirements: B.S.M.E. degree, or equivalent, and a minimum of two years direct maintenance experience in administering maintenance program, plant modifications and new construction in plants of this type.

Excellent starting salary and company benefits with opportunity for advancement. Resumes submitted will be given prompt attention and will be maintained in confidence.

Address Ad No. 6259, Croplife, Minneapolis 40, Minn.

Armour Announces Three Appointments

ATLANTA, GA.—Armour Agricultural Chemical Co. has announced the appointment of O. Denton Hudson as transportation manager; Thomas L. Carey, director of exploration and mining development, and David W. Brochstein, production manager—fertilizer division.

The appointments, all three in the company's general offices in Atlanta, were announced by W. E. Shelburne, president of the firm.

Mr. Hudson, Armour's Southeast area manager, transportation and distribution since 1956, replaces George W. Leyhe, who retired Aug. 27, 1960, after 38 years of service.

Mr. Hudson was staff assistant—transportation, Standard Brands, Inc., of New York City, prior to joining Armour in 1956. He was also associated with the Jack Cole Co., Inc., in Birmingham.

Mr. Carey, mining consultant, was previously employed by the Potash Company of America, Ltd., in that firm's offices in Saskatoon, Sask., Canada, and in Carlsbad, N. M., for 13 years. He was also associated with the Kennicott Copper Corp. in Ray, Ariz.

Mr. Carey, a native of Wisconsin, is a 1941 graduate of the Michigan College of Mining and Technology in Houghton, Mich.

Formerly plant manager of Armour Agricultural Chemical Co. in the Houston division, Mr. Brochstein joined the company in 1958. He served as a chemical control man, technical assistant and assistant plant manager in Houston, before being named plant manager in 1958.

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

★

Ashcraft-Wilkinson Co. 8, 23
Badger Meter Mfg. Co. 18
Baughman Mfg. 12
Blue, John, Co. 10
Chase Bag Co. 21
Duval Sulphur & Potash Co. 8, 23
Grace Chemical Co. 13
Highway Equipment Co. 19
Meyer, Wilson & Geo., & Co. 11
Molded Fiberglass Body Co. 21
Pennsalt of Washington Division, Pennsalt Chemicals Corp. 3
Reasor-Hill Corp. 23
Simonsen Mfg. Co. 16
Southwest Potash Corp. 17
Spraying Systems Co. 14
Texas Gulf Sulphur Co. 5
Tyler Mfg. Co. 15
U. S. Industrial Chemical 7

Croplife

the only newspaper serving the farm chemicals industry . . .

- ★ *provides complete news coverage (four editors and 46 correspondents)*
- ★ *reaches key management personnel (more than 4,900) with every issue*
- ★ *penetrates production and marketing segments with alternate issues . . .*

  PRODUCTION EDITION reaches more than 3,000 production personnel

  MARKETING EDITION reaches more than 6,000 dealers and distributors

offers the complete sales medium for advertisers interested in reaching the farm chemicals market.

THE MILLER PUBLISHING COMPANY • *Business Journalists Since 1873*

NEW YORK	CHICAGO	KANSAS CITY	MINNEAPOLIS	LOS ANGELES	SAN FRANCISCO
Room 1101 52 Vanderbilt Avenue ORegon 9-2490	2832 Board of Trade Building 141 West Jackson Boulevard HArrison 7-0515	612 Board of Trade Building 1005 Wyandotte Street Victor 2-1350	2501 Wayzata Boulevard FRanklin 4-5200	The Maurice A. Kimball Co., Inc. 2550 Beverly Boulevard DUnkirk 8-6178	The Maurice A. Kimball Co., Inc. 681 Market Street EXbrook 2-3365